CHAPTER 1: PHYSICAL ACTIVITY

In July 1996, the U.S. Department of Health and Human Services released the first Surgeon General's report on physical activity and health.[1]

Among the major findings:

- People who are usually inactive can improve their health and well-being by becoming even moderately active on a regular basis.
- Physical activity need not be strenuous to achieve health benefits.
- Greater health benefits can be achieved by increasing the amount (duration, frequency or intensity) of physical activity.

Regular physical activity protects against heart disease, high blood pressure, colon cancer, diabetes, depression and anxiety. People who exercise regularly outlive those who do not exercise. Regular physical activity maintains normal muscle strength, joint structure and joint function and is essential for normal skeletal development and attainment of optimal peak bone mass during childhood and adolescence. Even among persons in poor health, physical activity can improve the quality of life by enhancing psychological well being and improving physical function.

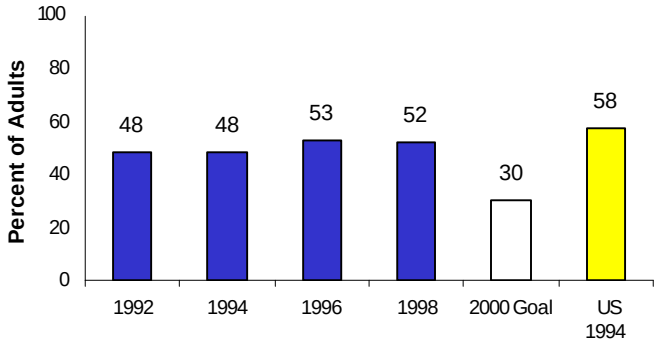
DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D1-D2.

Among adults, 52% have a sedentary lifestyle and 24% participate in no physical activity. These levels are far higher than the Healthy Alaskan goals of less than 30% for the prevalence of sedentary lifestyle and less than 15% for no physical activity. Furthermore, the proportion of adults who are overweight has been increasing at an alarming rate.

The proportion of youth engaging in regular vigorous activity is close to meeting the goal of 75% or higher among high school youths. However only 1 in 5 high school youth participate in daily Physical Education, far less than the goal of 50%. The Healthy Alaskan goals for daily Physical Education and regular vigorous activity were met for middle school students in 1995. The 1999 Youth Risk Behavior Survey data for middle school cannot be generalized statewide; nonetheless, the values are similar to those found in 1995 and are close to meeting the Healthy Alaskan goals.

Sedentary Lifestyle: Alaska Adults



Data source: Alaska BRFSS; Section of CHEMS; Sedentary lifestyle=no exercise or exercise less than 3 times per week for less than 20 minutes

RACE/ETHNICITY

Alaska Natives and Asian/Pacific Islanders are most likely to report inadequate leisure time physical activity (Table 1.1).

Table 1.1: Sedentary Lifestyle among adults by Race/Ethnicity*

Race/Ethnicity	Sedentary lifestyle* Percent	(95% CI)***
White	49	(47-51)
African-American	47	(35-59)
Alaska Native	59	(56-63)
Asian/Pacific Islander	56	(46-65)
Hispanic**	49	(40-57)

*Exercise less than 20 minutes per day or less than 3 times per week; data source Alaska BRFSS 1991, 1992, 1994, 1996, 1998

** Hispanic can be of any race

***95% Confidence Interval

REGIONAL DATA

Starting with 1998, the Alaska Behavioral Risk Factor Surveillance System collected data so that results can be reported for 5 regions, instead of the previous 4 regions in which Anchorage and Fairbanks were combined. The highest rate of sedentary lifestyle is found in the Rural region, and the lowest rates in Anchorage and vicinity, and Southeast Alaska.

Table 1.2: Sedentary Lifestyle among adults by Region: 1998*

Region of the State	Reported sedentary lifestyle* Percent	(95% CI)**
Anchorage and vicinity	49	(43-54)
Fairbanks and vicinity	53	(47-58)
Gulf Coast	56	(50-61)
Southeast	45	(40-51)
Rural	69	(63-74)

*Exercise less than 20 minutes per day or less than 3 times per week; data source: Alaska BRFSS 1998

**95% Confidence Intervals

DATA ISSUES

The Alaska Behavioral Risk Factor Surveillance System (BRFSS)[2] and the Youth Risk Behavior Survey (YRBS)[3] are the only means of obtaining statewide surveillance data on the Alaska population regarding physical activity. These data systems are standardized to national data collection systems so as to allow state and national comparisons.

The BRFSS also provides regional data. Data are collected in such a way that results can be presented by four (five since 1998) major regions of the state. Providing community data is more difficult. Community data can be provided for larger communities if several years of data are collapsed together. For smaller communities, special studies are necessary to collect data on physical activity.

The 1999 YRBS was intended to be an exact replica of the 1995 Alaska statewide survey so that the data could be compared across several years. However, the Anchorage school district chose not to participate in the 1999 statewide survey. As a result, the 1999 YRBS survey results only provide representative prevalence data for the state's student population outside Anchorage. Furthermore, the response rate for the 1999 middle school survey was not high enough to produce weighted data; as such, the results cannot be generalized statewide. For both high school and middle school data, any apparent trend between 1995 and 1999 must be regarded cautiously.

Data gaps include data on worksite fitness programs, community fitness facilities and clinical counseling about physical activity.

REFERENCES

1. Department of Health and Human Services. Physical Activity and Health: A report of the Surgeon General. Atlanta, Georgia: USDHSS, Centers for Disease Control and Prevention, 1996.
2. Alaska Behavioral Risk Factor Survey. Section of Community Health Services/EMS, Alaska Division of Public Health.
3. Youth Risk Behavior Survey Alaska Report 1995. Alaska Department of Health and Social Services and Department of Education, Feb. 1996.

CHAPTER 2: NUTRITION

Diet and nutrition play an important role in the development or prevention of four of the top 10 leading causes of death in Alaska and the US: cancer, heart disease, stroke, and diabetes.[1] Other major chronic diseases such as osteoporosis and gastrointestinal disorders are also associated with the typical American diet that has too few fruits, vegetables, grains and beans, and too much saturated fat.

Body Mass Index (BMI) describes relative weight for height and is significantly correlated with the amount of total body fat. BMI is calculated as weight (kg)/height squared (m^2). Increased BMI carries increased risks of heart disease, diabetes and other chronic diseases in all populations. Although the National Heart, Lung and Blood Institute has reclassifed the measure of "overweight" as a BMI of 25.0-29.9 kg/m^2, and "obesity" as a BMI of 30.0 kg/m^2 or greater, the previous standard of 27.8 or greater for men and 27.3 or greater for women will be used in this report until Year 2000 data becomes available.

In 1994, the coalition Eat Smart Alaska, which consists of public and private partners, began working to improve food consumption patterns among Alaskans. Eat Smart Alaska promotes *5 A Day For Better Health,* a nationwide program sponsored by the National Cancer Institute program to encourage people to eat at least five servings of fruits and vegetables every day.

The Women, Infants and Children's (WIC) Nutrition program enhances nutrition for low income women and children, and has recently initiated a statewide breast-feeding promotion campaign. The WIC program also provides high iron foods to low-income women and children who are at risk for iron deficiency anemia.

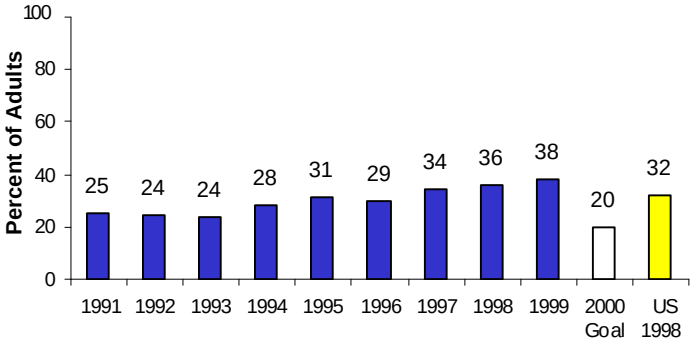
DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D3-D4.

Fruit and Vegetable Consumption

The percentage of Alaskan adults (age 18+) who consume ≥5 servings of fruits and vegetables per day has not changed dramatically (22% in 1991 and 24% in 1998) and remains below the Healthy Alaskans 2000 goal of ≥30%.

Overweight in Alaska: Percent of Adults



Data source: Alaska BRFSS; Section of CHEMS; Overweight: BMI greater than or equal to 27.8 for men and 27.3 for women.

Overweight and Obesity

Alaska has not met its goal of decreasing the percentage of adults who are overweight to <20%. In fact, the prevalence of overweight adults has been increasing.

Breast-Feeding

Breastfeeding initiation rates in Alaska, according to the Alaska Pregnancy Risk Assessment Monitoring System (PRAMS) increased between 1993 to 1997 from 83.8% to 86.3%.[3] This is one of the highest breastfeeding initiation rates in the nation. However, the Healthy Alaskans 2000 goal of ≥50% duration rates for breastfeeding continued through at least sixth months postpartum was not met. PRAMS data, 1991-1993, reported 32% duration rates at 6 months[4]. The average length of breast-feeding in Alaska is 3.3 months. The American Academy of Pediatrics recommends that "Breastfeeding continue for at least 12 months, and thereafter for as long as mutually desired."[5] (AAP, 1997)

Iron Deficiency

The goal to reduce iron deficiency in low income children served by WIC has been met. However, the goal to reduce iron deficiency among Alaska Native children receiving WIC to ≤15% remains unmet.

RACE/ETHNICITY

Asian/Pacific Islanders are more likely to eat 5 fruits and vegetables per day, and are least likely to be overweight

(Table 2.1). Alaska Natives and African-Americans are least likely to eat fruits and vegetables, and most likely to be overweight.

Table 2.1: Fruit and Vegetable Consumption and Overweight among adults by Race/Ethnicity

Race/ Ethnicity	5 fruits and vegetables/day*		Adults who are overweight**	
	Percent	(95% CI)****	Percent	(95%CI)****
White	24	(22-25)	29	(28-30)
African-American	15	(6-25)	37	(29-45)
Alaska Native	19	(16-23)	36	(33-39)
Asian/Pacific Islander	29	(19-39)	15	(10-20)
Hispanic***	21	(14-28)	32	(24-34)

*Alaska BRFSS 1992,94,96, 98
**Overweight =BMI ≥27.3 for women and 27.8 for men; Alaska BRFSS 1991-96
***Hispanic can be of any race
****95% Confidence interval

REGIONAL DATA

Starting with 1998, the Alaska Behavioral Risk Factor Surveillance System collected data so that results can be reported for 5 regions, instead of the previous 4 regions in which Anchorage and Fairbanks were combined. The lowest percentages of people eating five fruits and vegetables per day are found in the Rural region and in Fairbanks and vicinity.

Table 2.2 : Fruit and Vegetable Consumption among adults by Region: 1998

Region of the State	Adults eating 5 fruits and vegetables/ day*	
	Percent	(95% CI)**
Anchorage and vicinity	25	(20-30)
Fairbanks and vicinity	19	(15-24)
Gulf Coast	23	(19-28)
Southeast	25	(20-30)
Rural	19	(14-23)

*Alaska BRFSS 1998
**95% Confidence interval

DATA ISSUES

The Alaska Behavioral Risk Factor Surveillance System, the Youth Risk Behavior Survey and PRAMS are the only statewide nutrition-related surveillance activities in Alaska. The Pregnancy Nutrition Surveillance System (PNSS) and PedNSS only survey the WIC population and, therefore, do not represent a cross-section of Alaska. In addition, PNSS and PedNSS data may not be reliable due to problems with the WIC computer system. This system has been replaced, and reliable PNSS and PedNSS data should be available by the end of 2000.

Data gaps include information on food consumption patterns, nutrition knowledge and behaviors.

REFERENCES

1. Alaska Department of Health and Social Services. Eat Smart Alaska! Nutrition-Related Chronic Disease in Alaska: Baseline Needs Assessment. Section of Maternal, Child and Family Health, Division of Public Health. 1997.
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CHAPTER 3: TOBACCO

Tobacco use is responsible for approximately one in five deaths in Alaska and is the single most preventable cause of death and disease. Cigarette smoking accounts for 500 deaths per year in Alaska, including 27% of cardiovascular disease deaths, 33% of cancer deaths and 52% of respiratory deaths.[1] The Centers for Disease Control and Prevention estimates that 32% of youths who become regular smokers will die prematurely of a smoking-related death.[2]

Environmental tobacco smoke (passive smoking) also leads to disease, including lung cancer and heart disease in healthy non-smokers, and respiratory problems in young children.[3,4]

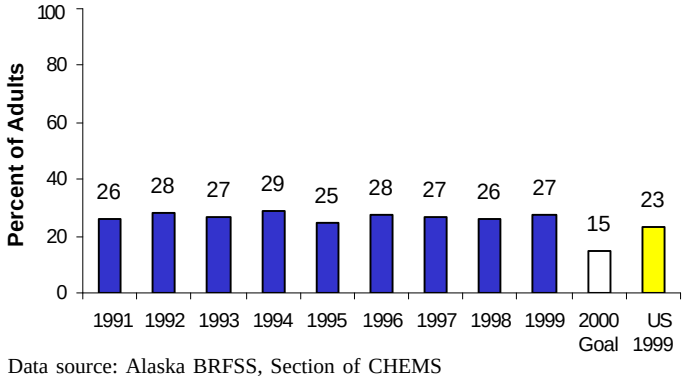
The Alaska Tobacco Control Alliance (ATCA) was formed in 1992 and is a statewide coalition of over 170 organizations and individuals. Its purpose is to encourage, coordinate and support effective methods for preventing tobacco use by children and discouraging use by adults. A priority of the Alliance is to influence public policy decisions related to tobacco use. The Alliance is working in the following areas: 1) community programs to reduce tobacco use; 2) cessation programs; 3) countermarketing; 4) school-based programs; 5) partnerships; 6) enforcement; and 7) program management and evaluation.[5]

The 1997 passage of a $0.71 per pack increase in the state cigarette tax was largely due to efforts of this coalition. Since the tobacco tax rate increase, there has been a16% decrease in taxable cigarette consumption, which has persisted for two years. Sales of other tobacco products have also declined, and tax revenue to the state from the sale of cigarettes and other tobacco products tripled.[6] More recently, two Alaska communities, Bethel and Anchorage, passed clean air ordinances through the efforts of ATCA and local coalitions.

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D5-D8.

Current Smoking Among Alaska Adults



Data source: Alaska BRFSS, Section of CHEMS

Alaska has one of the highest smoking rates in the United States, similar to those of the tobacco growing states. Alaska Natives have even higher smoking rates.

Current Smoking

The Healthy People 2000 goal is for no more than 15% of adults to be current smokers; Alaska rates remain much higher than the goal.

Initiation of Smoking in Youth

Among youth aged 18-24, 38% were current smokers in 1999. Among high school youth, 33.9% reported using cigarettes in the past 30 days (current smokers), similar to the US rate of 34.8.

Smoking Cessation

The goal for smoking cessation is that 60% or higher of smokers will stop for at least one day. In 1998, 57.3% of Alaskan smokers did this. There appears to have been an increase in the percent of current smokers who quit during pregnancy, from 20% in 1991 to almost 30% in 1999.

Smokeless Tobacco Use

The goal for smokeless tobacco is that no more than 4% of the population aged 6-24 will be current users of smokeless tobacco. Alaska youth remain far above this goal, especially males.

Mortality from Tobacco Related Diseases

Lung cancer and chronic obstructive lung disease mortality rates have remained relatively constant since 1989. The lung cancer mortality rate has reached the goal of not surpassing 38.3/100,000, and the chronic

obstructive lung disease mortality rate has reached the objective of 23.9/100,000. These goals were achieved most likely because smoking rates declined in prior decades. With an increase in smoking rates, these mortality rates could again increase.

RACE/ETHNICITY

Smoking prevalence is highest among Alaska Natives (Table 3.1).

Table 3.1: Current Smoking among Adults by Race/Ethnicity: 1991-1999

Race/Ethnicity	Adults who are current smokers* Percent	(95% CI)***
White	25	(24-26)
African-American	22	(15-28)
Alaska Native	42	(40-45)
Asian/Pacific Islander	20	(14-25)
Hispanic**	23	(18-28)

*Alaska BRFSS 1991-1999
**Hispanic can be of any race
***95% Confidence intervals

REGIONAL DATA

Starting with 1998, the Alaska Behavioral Risk Factor Surveillance System collected data so that results can be reported for 5 regions, instead of the previous 4 regions in which Anchorage and Fairbanks were combined. The highest smoking rate is consistently found in the Rural region (Table 3.2).

Table 3.2: Current Smoking among Adults by Region: 1999

Region of the State	Adults who are current smokers* Percent	(95% CI)**
Anchorage and vicinity	25	(19-31)
Fairbanks and vicinity	28	(23-33)
Gulf Coast	29	(23-34)
Southeast	27	(21-32)
Rural	38	(32-45)

*Alaska BRFSS 1999
**95% Confidence Intervals

Lung cancer mortality rates are highest in the Wade Hampton Census Area. (Table 3.3).

DATA ISSUES

Although the full impact of the tobacco tax rate increase is difficult to quantify, there are indications that the increase in the tobacco tax has resulted in a decrease in smoking among youth. A special analysis of the 1995 and 1999 Alaska Youth Risk Behavioral Surveys that excludes Anchorage (Anchorage chose not to participate in 1999) shows a slight decrease in smoking rates among high school students (not statistically significant) and a larger decrease among ninth graders.

The Alaska Behavioral Risk Factor Surveillance System and the Youth Risk Behavior Survey are the only currently ongoing means of obtaining statewide surveillance data on the Alaska population regarding tobacco use. These data systems are standardized to national data collection systems to allow state and national comparisons. The BRFSS also provides regional data. Data are collected in such a way that results can be presented by four (five since 1998) major regions of the state. Providing community data is more difficult. Community data can be provided for larger communities if several years of data are aggregated. For smaller communities, special studies are necessary to collect data on tobacco use.

The 1999 YRBS was intended to be an exact replica of the 1995 Alaska statewide survey so that the data could be compared across several years. However, the Anchorage school district choose not to participate in the 1999 statewide survey. As a result, the 1999 YRBS survey results only provide representative prevalence data for the state's student population outside Anchorage. Furthermore, the response rate for the 1999 middle school survey was not high enough to produce weighted data; as such, the results cannot be generalized statewide. For both high school and middle school data, any apparent trend between 1995 and 1999 must be regarded cautiously.

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2. CDC. Projected smoking-related deaths among youth—United States. MMWR 1996;45:971-4.
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4. Steenland K. Passive smoking and the risk of heart disease. J Am Med Assoc. 1992;267:94-99.
5. Alaska Tobacco Control Alliance: The Alaska Tobacco Control Program: A plan for the future, March 5, 1999.
6. Schumacher C, Fried B: The Impact of the 1997 Tobacco Tax Rate Increase in Alaska, An Update. Alaska Department of Revenue and Alaska Department of Health and Social Services. June 2000. Online at http://www.hss.state.ak.us/dph/deu/publications/publications.html

Table 3.3: Age Adjusted Death Rates by Census Area
Lung Cancer
Alaska Residents: 1990-1998

Region/Census Area	Number of Deaths	Expected Number of Deaths †	Average Population	Age Adjusted Mortality Rate	Lower Confidence Limit	Upper Confidence Limit
Anchorage/Mat-Su						
ANCHORAGE BOROUGH	574	605.8	247,444	48.8	44.6	53.0
MATANUSKA-SUSITNA BOROUGH	131	129.8	47,302	49.2	40.4	57.9
Gulf Coast						
KENAI PENINSULA BOROUGH	170	139.2	44,895	64.8	54.7	74.8
KODIAK ISLAND BOROUGH	34	30.5	14,109	60.3	38.8	81.9
VALDEZ-CORDOVA CENSUS AREA	37	30.1	10,288	61.1	40.5	81.6
Interior						
DENALI BOROUGH	3	0.9	1,831	*	*	*
FAIRBANKS NORTH STAR BOROUGH	176	173.6	81,163	51.9	43.8	59.9
SOUTHEAST FAIRBANKS CENSUS AREA	13	17.2	6,215	36.3	15.2	57.4
YUKON-KOYUKUK CENSUS AREA	25	19.9	6,542	61.7	37.3	86.2
Northern						
NOME CENSUS AREA	29	25.0	8,872	57.8	36.3	79.4
NORTH SLOPE BOROUGH	19	14.6	6,744	73.6	39.4	107.8
NORTHWEST ARCTIC BOROUGH	15	15.0	6,518	49.6	24.3	75.0
Southeast						
HAINES BOROUGH	10	10.4	2,301	59.5	18.6	100.3
JUNEAU BOROUGH	82	87.6	28,572	50.2	39.1	61.3
KETCHIKAN GATEWAY BOROUGH	51	51.8	14,472	50.4	36.5	64.4
PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	11	18.2	6,716	33.5	12.1	54.8
SITKA BOROUGH	22	31.5	8,833	37.1	21.2	52.9
SKAGWAY-HOONAH-ANGOON CENSUS AREA	16	14.7	4,492	53.4	26.3	80.6
WRANGELL-PETERSBURG CENSUS AREA	29	27.9	7,200	50.9	32.2	69.6
Southwest						
ALEUTIANS EAST BOROUGH	4	3.3	2,276	*	*	*
ALEUTIANS WEST CENSUS AREA	9	6.5	7,368	29.6	1.7	57.5
BETHEL CENSUS AREA	37	37.5	14,835	51.5	34.8	68.2
BRISTOL BAY BOROUGH	3	1.9	1,363	*	*	*
DILLINGHAM CENSUS AREA	12	8.4	4,351	56.7	23.4	90.1
LAKE AND PENINSULA BOROUGH	6	3.2	1,787	61.0	12.2	109.8
WADE HAMPTON CENSUS AREA	27	15.5	6,497	94.3	58.5	130.2
TOTAL	1,546	1,546.0	592,986	521	49.4	54.8

* For number of deaths equal to 4 or less, rates are not presented

** Rates are per 100,000 population and are age-adjusted to the U.S. 1970 standard population: ICD-9 code 162.

† Expected number of deaths is calculated by multiplying the state age specific rates to the area's population. Thus it is the number of deaths that would have occurred if the rate in the area were the same as the state rate.

Lung Cancer Deaths
Alaska (1990-98)

Number of Deaths	**1,546**
Age-Adjusted Rate**	**52.1**

CHAPTER 4: ALCOHOL AND OTHER DRUGS

Alcohol and drug abuse have a devastating impact on individuals, families and entire communities. Alcohol abuse has been linked to higher rates of cirrhosis, suicides, accidental injuries and deaths and motor vehicle accidents. Approximately 11% of preventable deaths are related to alcohol and illicit drug use.[1] Alcohol use during pregnancy is the leading preventable cause of birth defects and mental retardation.[2] Alcohol and other drug abuse may be both a cause and effect of homelessness.[3]

In Alaska, problems of alcohol abuse, dependence and need for tratment far exceed the problems with all other drugs. Alcohol is the most widely available and used drug in Alaska. Alaska is among the states with the nation's most severe rates of alcohol problems.[4] Conversely, Alaska is among the states with the lowest rates for controlled drug problems.[4]

DATA SUMMARY

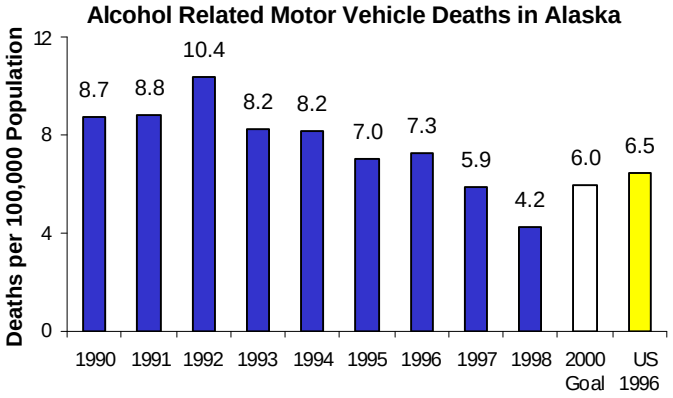
For all the data pertaining to this chapter, see Appendix D, pages D9-D11.

Alcohol-Related Motor Vehicle Crash Deaths

The Department of Public Safety tracks deaths from alcohol-related motor vehicle crash deaths. An alcohol-related crash is defined as one with alcohol use of any amount or a police report indicating alcohol use. More than one death can result per crash. The rates for all ages and the rate for ages 15-24 have declined during the 1990s and have reached the Healthy Alaskan 2000 goals.

Mortality

Deaths from cirrhosis, which is largely attributable to alcohol use, have declined. The decline is most evident among Alaska Natives. Drug-related deaths have not declined, and have not reached the Healthy Alaskans 2000 goal.



Data source: Highway Safety Planning Agency, Department of Public Safety; Fatalities resulting from crashes with alcohol use of any amount or police reported alcohol use at the scene.

Binge and Chronic Drinking

Binge drinking is defined as having 5 or more drinks on at least one occasion in the past month. While the overall percent of adults reporting binge drinking has declined somewhat during the 1990s, the prevalence among young people remains high (41% of adults aged 18-24 reported binge drinking as compared to 14% of those aged 45-54).[5] Among high school students, 34% reported binge drinking at least once in the past 30 days.

Chronic drinking is defined as having had a total of 60 or more drinks in the past month. Alaska's rate has remained fairly constant and is higher than the comparable US rate.

Fetal Alcohol Syndrome

Fetal Alcohol Syndrome is covered in the Maternal, Infant and Child Health (Chapter 13.)

Drug Use

Approximately 10% of mothers of newborns report having used marijuana twelve months prior to delivery and between one and two percent report having used cocaine. Usage rates have not varied significantly from 1992 through 1998. Among high school youth, rates of use of alcohol, marijuana and cocaine are similar to comparable US rates, and have not changed between 1995 and 1999. Alcohol use has met the Healthy Alaskans 2000 goal but marijuana and cocaine use remain higher than the Healthy Alaskan 2000 goals. Among the general adult population, marijuana is the most commonly used controlled substance with approximately 1.1% of the adult population exhibiting

dependence. Low rates of hallucinogen, cocaine and amphetamine dependence are found among Alaska adults (0.1%, 0.2%, and 0.1% respectively). Dependence on controlled substances is more problematic among younger age groups (18-24 and 25-44 years of age) than among older age groups.[4]

Per Capita Alcohol Use

Alaska per capita alcohol consumption is higher than the national average. Although per capita consumption appears to have decreased slightly during the 1990s, it has not reached the Healthy Alaskans goal. Alcohol use could be high in Alaska for several reasons, including isolation, separation from families and a relatively young population. The per capita consumption estimates could also be elevated, however, because of the high influx of visitors during the tourist season.

RACE/ETHNICITY

Asian/Pacific Islanders report the lowest frequency of binge drinking. The rates of binge drinking among whites, African-Americans, Alaska Natives and Hispanics are similar (Table 4.1).

*Table 4.1: Binge Drinking among Adults by Race/Ethnicity: 1991-1999**

Race / Ethnicity**	Adults who report binge drinking*** Percent	(95% CI)****
White	20	(19-21)
African-American	20	(13-26)
Alaska Native	23	(21-26)
Asian/Pacific Islander	12	(7-17)
Hispanic**	22	(17-28)

*Alaska BRFSS 1991-99
**Hispanic can be of any race
***Five or more drinks on at least one occasion in the past month
****95% Confidence intervals

REGIONAL DATA

Starting with 1998, the Alaska Behavioral Risk Factor Surveillance System collected data so that results can be reported for 5 regions, instead of the previous 4 regions in which Anchorage and Fairbanks were combined. The rate of binge drinking does not vary widely by region; however, the Rural region has a slightly higher prevalence (Table 4.2).

*Table 4.2: Binge Drinking among Adults by Region: 1999**

Region of the State	Adults reporting binge drinking** Percent	(95% CI)***
Anchorage and vicinity	17	(13-21)
Fairbanks and vicinity	21	(17-26)
Gulf Coast	15	(11-19)
Southeast	21	(16-27)
Rural	23	(18-29)

*Alaska BRFSS 1999
**Five or more drinks on at least one occasion in the past month
***95% Confidence Intervals

DATA ISSUES

Since 1994, the State of Alaska Division of Alcohol and Drug Abuse has been conducting and participating in several research studies designed to determine the prevalence, severity and needs for treatment of Alaska's substance abuse problems. Several of the studies have recently been completed, and summaries can be found on the Division of Public Health website.[4] Complete copies of the reports can be obtained by contacting the Division of Alcohol and Drug Abuse at 1-800-478-2072.

For youth substance abuse, the Youth Risk Behavior Survey remains the most important data source. Because of 1995 YRBS data, the Division of Alcohol and Drug abuse was able to apply for and receive prevention grants that are now delivering much needed service to Alaska's communities. The survey needs to be done on a regular basis to evaluate current programs and to document the need for new efforts.

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CHAPTER 5: FAMILY PLANNING

In Alaska, approximately 140,000 women are of childbearing age, and each year there are approximately 10,000 live births. Data collected by the Section of Maternal Child and Family Health in the Division of Public Health indicate that about 40% of live births occur to women who did not intend to become pregnant, referred to as "unintended pregnancies."[1]

The Unintended Pregnancy Prevention Initiative (UPPI) is the Division of Public Health's strategy to reduce unintended pregnancies to low income, unmarried women thereby decreasing this population's need for public assistance support. The census areas of Anchorage, Fairbanks, Kenai, and MatSu were targeted to receive increased family planning services and extensive education and outreach activities.

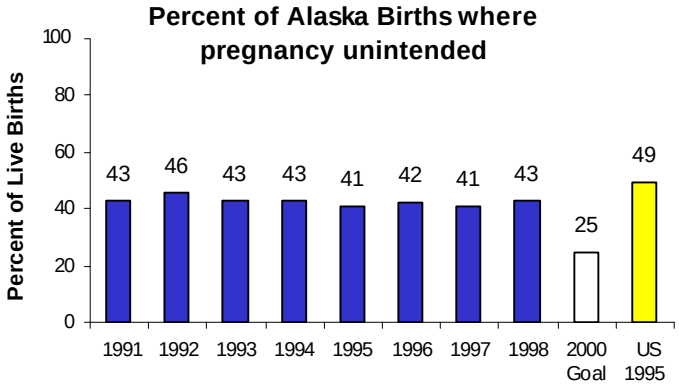
The UPPI served 5776 women during fiscal years 1998-1999. Teens and young adult women up to 24 years old comprised approximately 75% of the population served; 88.5% of them were unmarried. For each year, 69% of the women served reported incomes at or below 100% of the federal poverty level. While these women were not eligible for Medicaid, they were poor, uninsured, living under severe financial constraints, and were at high risk of becoming dependent on public assistance should they experience an unintended pregnancy.

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D12-D13.

Unintended Pregnancy

In Alaska, the proportion of births that are the result of an unintended pregnancy has not declined during the 1990s and remains higher than the goal of ≤25%. Recent data from the Section of Maternal Child and Family Health found that the percentage of unintended pregnancies decreased with each decade of maternal age (69% of pregnancies occurring among teens were unintended, as compared to 29% among women aged 30 and older). Unintended pregnancies were also more common among single women (64% among single women as compared to 33% among married women).[1]



Data Source: Alaska PRAMS, Section of Maternal, Child and Family Health

Teen Pregnancy

Nationally, and in Alaska, the birthrate among teens declined in the 1990s. From 1991-1998 Alaska had the second largest percent decline in teen births of any state in the United States.[2] National data indicate that the decline in teen births is not due to an increase in abortion, as abortion rates have also declined.[3] Factors that have been attributed to the falling teen birth rates are a decrease in adolescent sexual activity and increases in use of condoms and other contraceptives. In addition, the economic expansion of the 1990s may have given teens a reason to more highly value education and work and to therefore postpone pregnancy.[3]

Adolescents Engaging in Sexual Intercourse

The 1999 Alaska Youth Risk Behavior Survey found that the proportion of high school students who had ever engaged in sexual intercourse decreased slightly between 1995 and 1999, from 48% to 42% for boys and from 46% to 44% for girls. The rates of ever having had sexual intercourse increased with age and grade in school. Alaska rates were less than the US rates of 52% for boys and 48% for girls. Among Alaska middle school students, 16% had engaged in sexual intercourse. The Healthy Alaskans goal of 35% or less of 15 year olds to have engaged in sexual intercourse has been met, but the rate for older adolescents (40% or less by age 17) has not been met.

Contraceptive Use by Sexually Active Unmarried Adolescents

The Youth Risk Behavior Survey provides the only information regarding adolescent use of contraceptives. The 1999 high school survey found that 71% of boys and 73% of girls used some form of contraception at the most recent sexual intercourse. The rates are lower than the Healthy Alaskans goal of 80% of higher, and are also lower than the comparable US rates of 85% for boys and 81% for girls.

RACE/ETHNICITY

The highest rates of teen birth are found among Alaska Natives, and the lowest among whites (Table 5.1).

*Table 5.1: Teen Births in Alaska by Race/ Ethnicity 1998**

Race / Ethnicity**	Births to Girls age 15-19 (per 1000 girls aged 15-19) Rate	(95% CI)***
White	37	(34-40)
African-American	50	(37-64)
Alaska Native	86	(28-94)
Asian/Pacific Islander	48	(34-61)
Hispanic**	61	(42-68)

*Data source: Alaska Bureau of Vital Statistics
**Hispanic can be of any race
***95% Confidence interval

DATA ISSUES

Data sources related to family planning include the Pregnancy Risk Assessment Monitoring System (PRAMS), which collects self-reported data on a variety of issues from a sample of mothers who have recently given birth; the birth certificate data collected by the Bureau of Vital Statistics; and the Youth Risk Behavior Survey which collects information on a sample of high school and middle school students. Alaska has collected PRAMS data since 1990.

The 1999 YRBS was intended to be an exact replica of the 1995 Alaska statewide survey so that the data could be compared across several years. However, the Anchorage school district chose not to participate in the 1999 statewide survey. As a result, the 1999 YRBS survey results only provide representative prevalence data for the state's student population outside Anchorage. Furthermore, the response rate for the 1999 middle school survey was not high enough to produce weighted data; as such, the results cannot be generalized statewide. For both high school and middle school data, any apparent trend between 1995 and 1999 must be regarded cautiously.

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CHAPTER 6: MENTAL HEALTH

In December, 1999, the first Surgeon General's report on mental health was released.[1] The science-based report emphasizes that mental health is fundamental to health, that mental disorders are real health conditions, and that a solid research base must guide the development of policies. Additional themes include:

- The need for a public health perspective that focuses on epidemiologic surveillance, health promotion, disease prevention and access to services;
- Mental health disorders are disabling; in the United States, mental illness is an unrecognized cause of disability and premature mortality, second to cardiovascular diseases;
- Mental health and mental illness are points on a continuum;
- The mind and body are inseparable, and the centuries-old stigma against people with mental illness must be overcome.

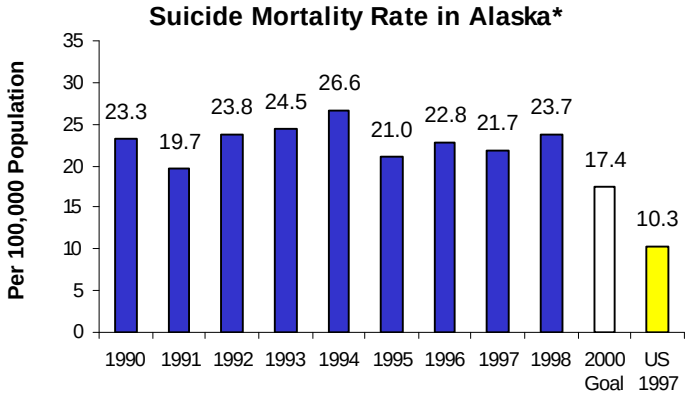
In Alaska, the Alaska Mental Health Board plans and coordinates state mental health services, advocates for people with mental illness, and evaluates the state mental health program. The Board collaborates with state agencies (Departments of Correction, Education, Administration and Health and Social Services) that deliver or fund mental health services, the Alaska Mental Trust Health Authority, and service consumers and providers to develop an integrated and comprehensive mental health program.[2]

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D14-D15.

Suicide Deaths

In 1998, Alaska had the highest age-adjusted rate of suicide deaths, with Nevada a close second.[3] The suicide mortality rate, which is 100% higher than the national rate, has not declined during the 1990s and has not reached the goal of a 25% reduction. Rates are highest among young men and among Alaska Natives.



Data Source: Bureau of Vital Statistics
*Rate per 100,000 population, age-adjusted to US 1940 population; ICD-9 codes 950-959

While suicide deaths occur much more frequently among males, data from the Alaska Trauma Registry indicate that suicide attempts occur more commonly among females.[4]

In 1999, 2.5% of Alaska high school girls reported having had at least one suicide attempt serious enough to require medical attention in the past year, compared to 3.1% of US high school girls.

Prevalence of Mental Illness

Although Alaska-specific data on the prevalence of mental illness is not available, the prevalence of mental illness is estimated using methodologies developed by the national Center for Mental Health Services (CMHS). Among children aged 5-18, approximately 10% have a serious emotional disturbance (SED); among adults ages 19-54, 6.2% have a serious mental illness (SMI), and among adults ages 55 and older, 3.9% have a serious mental illness. In addition, approximately 1,300 homeless people and 2,900 institutionalized people (Alaska Psychiatric Institute, nursing homes, correctional facilities, etc.) in Alaska are estimated to have SED/SMI. Based on the above data, approximately 43,200 Alaskans had SED/SMI in 1998.[2]

Utilization of Mental Health Services

In 1997, about 22,000 individuals received services provided by the community mental health center grantees or Alaska Psychiatric Hospital. Assuming that these individuals have SED/SMI, then about half of those with SED/SMI received services from community services in 1997.

RACE/ETHNICITY

Alaska Natives are over-represented among Alaskans with SED/SMI. As an example, Table 6.1 presents the racial distribution of individuals served by Community Mental Health grantees in 1996. Although Alaska Natives comprise 16.5% of the Alaska population, they comprise 25.9% of individuals served by the Community Mental Health Center grantees. More recent data continue to show over-representation of Alaska Natives in populations served, including the Department of Corrections, Alaska Psychiatric Institute, and Medicaid.[2]

Table 6.1: Racial Distribution of Individuals Served by Community Mental Health grantees: 1996

Race / Ethnicity**	Percent of Total Served (n=4420)
White	63.4
African-American	2.4
Alaska Native	25.9
Asian/Pacific Islander	1.4
Hispanic	2.7

*Data source: Alaska Mental Health Board, 1997 Annual Report
**187 individuals or 4.2% were of other or unknown race.

REGIONAL DATA

The suicide death rate from 1990-1998 in the Bethel, Nome, North Slope, Northwest Arctic, Wade Hampton and Yukon-Koyukuk census areas ranged from twice to 4.5 times the state rate, which was twice the national death rate for suicide in 1998 (Table 6.2).

The Alaska Mental Health Board has identified Rural Services as one of four "critical need spheres" requiring continued planning and increased budgeting. The Board would like to expand the village-based service delivery system that currently exists in some villages.[5]

DATA ISSUES

The prevalence of mental illness among Alaskans is estimated by the National Center for Mental Health Services based on certain demographic and socioeconomic factors. Actual studies on the Alaska population have not been done. Additional difficulties arise when estimating the source of care for these individuals. For example, not all agencies are able to provide unduplicated counts for individuals served.

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5. Alaska Mental Health Board: Report to the Alaska Mental Health Trust Authority FY2000 Request for Recommendations. July 1998.

Table 6.2: Age Adjusted Death Rates by Census Area
Suicide
Alaska Residents: 1990-1998

Region/Census Area	Number of Deaths	Expected Number of Deaths †	Average Population	Age Adjusted Mortality Rate	Lower Confidence Limit	Upper Confidence Limit
Anchorage/Mat-Su						
ANCHORAGE BOROUGH	360	489.4	247,444	16.8	15.0	18.6
MATANUSKA-SUSITNA BOROUGH	77	88.5	47,302	18.8	14.4	23.1
Gulf Coast						
KENAI PENINSULA BOROUGH	77	85.1	44,895	20.1	15.5	24.8
KODIAK ISLAND BOROUGH	23	25.8	14,109	18.6	10.5	26.6
VALDEZ-CORDOVA CENSUS AREA	14	17.8	10,288	16.6	7.4	25.8
Interior						
DENALI BOROUGH	2	1.5	1,831	*	*	*
FAIRBANKS NORTH STAR BOROUGH	160	159.9	81,163	23.1	19.4	26.9
SOUTHEAST FAIRBANKS CENSUS AREA	14	8.8	6,215	28.7	13.4	44.0
YUKON-KOYUKUK CENSUS AREA	57	11.6	6,542	117.0	86.2	147.9
Northern						
NOME CENSUS AREA	49	14.5	8,872	73.7	52.8	94.5
NORTH SLOPE BOROUGH	30	10.4	6,744	56.8	35.9	77.8
NORTHWEST ARCTIC BOROUGH	41	10.6	6,518	81.9	56.5	107.2
Southeast						
HAINES BOROUGH	7	3.3	2,301	30.6	6.5	54.7
JUNEAU BOROUGH	36	54.6	28,572	14.1	9.2	19.0
KETCHIKAN GATEWAY BOROUGH	23	28.2	14,472	18.0	10.4	25.7
PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	12	11.2	6,716	19.1	8.0	30.1
SITKA BOROUGH	15	16.0	8,833	17.4	8.2	26.5
SKAGWAY-HOONAH-ANGOON CENSUS AREA	4	6.0	4,492	*	*	*
WRANGELL-PETERSBURG CENSUS AREA	18	13.0	7,200	30.4	15.7	45.0
Southwest						
ALEUTIANS EAST BOROUGH	6	3.3	2,276	30.9	5.0	56.9
ALEUTIANS WEST CENSUS AREA	5	9.4	7,368	7.5	0.7	14.2
BETHEL CENSUS AREA	58	23.2	14,835	49.1	36.3	62.0
BRISTOL BAY BOROUGH	1	0.6	1,363	*	*	*
DILLINGHAM CENSUS AREA	12	5.9	4,351	33.3	13.9	52.7
LAKE AND PENINSULA BOROUGH	6	1.7	1,787	43.8	7.8	79.7
WADE HAMPTON CENSUS AREA	45	7.0	6,497	88.5	62.6	114.5
TOTAL	1,152	1,152.0	592,986	23.1	21.7	24.4

* For number of deaths equal to 4 or less, rates are not presented

** Rates are per 100,000 population and are age-adjusted to the U.S. 1940 standard population: ICD-9 codes 950-959.

† Expected number of deaths is calculated by multiplying the state age specific rates to the area's population. Thus it is the number of deaths that would have occurred if the rate in the area were the same as the state rate.

Suicide Deaths
Alaska (1990-98)

Number of Deaths	**1152**
Age-Adjusted Rate**	**23.1**

CHAPTER 7: VIOLENT AND ABUSIVE BEHAVIOR

Violent and abusive behavior includes suicide, homicide and legal intervention, domestic violence, sexual abuse, rape, child sexual and physical abuse, and other physical assaults that result in physical trauma to the victim. Many assailants and victims of violent death have previously been involved in nonfatal violent episodes.[1]

Although there are many causes for violent behavior, alcohol consumption remains a significant risk factor for both the victim and perpetrator.[1]

Domestic violence is a leading cause of injuries to women.[2] In Alaska, domestic violence accounts for one-half or more of female homicides.[3] A growing body of scientific research has identified numerous long-term health effects of living in an abusive relationship.[4-8]

Reports of children being abused or neglected have been required in the State of Alaska since the mid-1970's. The number of reports has steadily increased with education and increased public awareness about child abuse. There is a strong correlation between domestic violence and child abuse with both forms of family violence frequently occurring in the same household.

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D16 - D18.

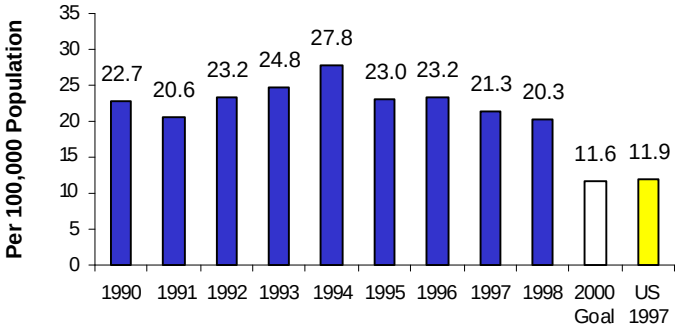
Homicide

Death rates from homicide declined in the 1990s. Homicide was the cause of death for 44 Alaskans in 1998, and ranked as the tenth leading cause of death. In over 65% of the homicides, death was by firearms.[9] Males made up 71% of the homicide victims.

Firearm-Related Deaths and Injuries

Firearm-related deaths include all deaths caused by firearms, whether homicide, suicide, accident, or undetermined. Alaska's rate of death from firearms is almost twice the U.S. rate. Among Alaska Natives, rates of death from firearms are generally 1.7 to 2.5 times the rates for all Alaskans.

Firearm Related Deaths in Alaska



Data source: Bureau of Vital Statistics; Age-adjusted to US 1940 population; ICD-9 codes 922.0-922.3, 922.8-922.9, 955.0-955.4, 965.0-965.4, 970.0-979.9, 985.0-985.4

Many children in Alaska are killed or seriously injured by firearms each year. As a mechanism of fatal injury, during the time period 1990-1997, firearms exceeded any other category for children and teenagers aged 0-19 years. Among children dying from injuries, 165 died as a result of firearms, 146 died from motor vehicle crashes, 65 died from drowning, 43 died from fires, 38 died of suffocation, and 18 died from off-road vehicles. In addition to the 165 children who died from firearms, 222 were seriously injured and hospitalized.[10]

Abuse, Assault and Rape

During Fiscal Year 1999, the Division of Youth Services received over 16,000 reports of harm to children. Of these, 57.7% were reports of neglect and 36.6% were reports of physical or sexual abuse. The total number of reports increased during the 1990s, but the rate of children with reports of harm per 1,000 children has remained fairly constant since 1993.[11]

The Pregnancy Risk Assessment Monitoring System (PRAMS), a population based survey of Alaska resident women who have recently given birth, provides the only population-based estimates on the prevalence of domestic violence in Alaska. An analysis of the 1996-97 PRAMS data found that 10% of women who had recently given birth indicated that they had experienced physical abuse either during the 12 months prior to pregnancy or during pregnancy. Abuse was more common among Alaska Native women (19%) and among teenagers (22%). Women indicating abuse most commonly identified their husband or partner as the main perpetrator of abuse.[12]

The rate of all assaults in Alaska increased from 1992 until 1995, and then declined slightly. There is not a comparable US value. Alaska's rate of rape and attempted rape, as measured by events reported to law enforcement agencies, declined during the 1990s. However, the 1998 rate of 130 per 100,000 women remains almost twice as high as the comparable US rate of 67 per 100,000 women.

Violent and Abusive Behavior among Adolescents
Among Alaska high school students, 5.5% of boys and 3.0% of girls report having been injured in a physical fight in the past 12 months. In addition, 37.5% of boys and 7.7% of girls report having carried a weapon in the past 30 days. These data are from the 1999 Youth Risk Behavior Survey, which did not include Anchorage. Alaska's data on youth are similar to the US data.

RACE/ETHNICITY

The highest rates of homicide are found among African-Americans and Alaska Natives (Table 7.1).

Table 7.1: Homicide Mortality Rate by Race: Alaska 1990-98

Race	Homicide Mortality 1990-98*	
	Rate	(95% CI)**
White	6.0	(5.2-6.8)
African-American	18.1	(12.4-23.7)
Alaska Native	17.8	(14.8-20.8)
Asian/Pacific Islander	11.3	(6.5-16.0)

*Rate per 100,000 population; age-adjusted to US 1940 population; ICD-9 codes 960-978; data on Hispanics not available

**95% Confidence Intervals

REGIONAL DATA

Firearm-related death rates vary widely by region (Table 7.2). The highest rate, 113.4 per 100,000 population, a rate that is five-fold higher than the state rate, is found in the Yukon-Koyukuk Census area. Other census areas with high rates of firearm-related deaths include Wade Hampton, Nome, North Slope Borough, Lake and Peninsula Borough, and Bethel. The lowest rates are found in the Juneau and Sitka Boroughs.

DATA ISSUES

There is a need for population-based data on domestic violence in Alaska. Ideally, these data could be stratified by region and race/ethnicity to better understand the magnitude of this problem and to help target education and resources. Data on the interface between domestic violence and child abuse are also needed.

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11. Division of Family and Youth Services.
12. *Family Health Dataline*, "Domestic Violence in Alaska," April 1999 Vol 5, No 2.

Table 7.2: Age Adjusted Death Rates by Census Area
Firearms Deaths
Alaska Residents: 1990-1998

Region/Census Area	Number of Deaths	Expected Number of Deaths †	Average Population	Age Adjusted Mortality Rate	Lower Confidence Limit	Upper Confidence Limit
Anchorage/Mat-Su						
ANCHORAGE BOROUGH	381	484.2	247,444	18.4	16.5	20.4
MATANUSKA-SUSITNA BOROUGH	85	88.8	47,302	20.4	15.9	25.0
Gulf Coast						
KENAI PENINSULA BOROUGH	78	82.8	44,895	20.5	15.8	25.2
KODIAK ISLAND BOROUGH	21	25.1	14,109	17.7	9.7	25.6
VALDEZ-CORDOVA CENSUS AREA	16	18.1	10,288	20.2	9.8	30.7
Interior						
DENALI BOROUGH	2	1.6	1,831	*	*	*
FAIRBANKS NORTH STAR BOROUGH	158	158.9	81,163	22.4	18.7	26.0
SOUTHEAST FAIRBANKS CENSUS AREA	15	8.7	6,215	31.7	15.4	47.9
YUKON-KOYUKUK CENSUS AREA	57	11.7	6,542	113.4	83.4	143.4
Northern						
NOME CENSUS AREA	45	14.7	8,872	66.8	47.0	86.5
NORTH SLOPE BOROUGH	30	10.7	6,744	56.9	35.9	77.9
NORTHWEST ARCTIC BOROUGH	21	9.7	6,518	41.7	23.7	59.7
Southeast						
HAINES BOROUGH	4	3.2	2,301	*	*	*
JUNEAU BOROUGH	29	50.6	28,572	12.2	7.5	16.9
KETCHIKAN GATEWAY BOROUGH	24	27.3	14,472	18.4	10.7	26.1
PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	15	9.8	6,716	26.2	12.4	39.9
SITKA BOROUGH	12	14.4	8,833	13.9	5.7	22.1
SKAGWAY-HOONAH-ANGOON CENSUS AREA	6	7.8	4,492	15.8	2.8	28.8
WRANGELL-PETERSBURG CENSUS AREA	18	12.9	7,200	31.1	16.1	46.1
Southwest						
ALEUTIANS EAST BOROUGH	5	3.2	2,276	30.2	2.7	57.7
ALEUTIANS WEST CENSUS AREA	3	10.4	7,368	*	*	*
BETHEL CENSUS AREA	56	24.6	14,835	47.4	34.8	60.1
BRISTOL BAY BOROUGH	2	0.6	1,363	*	*	*
DILLINGHAM CENSUS AREA	13	6.0	4,351	34.6	15.2	54.1
LAKE AND PENINSULA BOROUGH	8	2.3	1,787	54.0	15.3	92.6
WADE HAMPTON CENSUS AREA	37	7.4	6,497	72.6	49.0	96.1
TOTAL	1,142	1142.0	592,986	23.0	21.6	24.4

* For number of deaths equal to 4 or less, rates are not presented

** Rates are per 100,000 population and are age-adjusted to the U.S. 1940 standard population: ICD-9 codes 922.0-922.3; 922.8-922.9; 955.0-955.4; 965.0-965.4; 970.0-979.9; 985.0-985.4

† Expected number of deaths is calculated by multiplying the state age specific rates to the area's population. Thus it is the number of deaths that would have occurred if the rate in the area were the same as the state rate.

Firearm Deaths
Alaska (1990-98)

Number of Deaths	**1142**
Age-Adjusted Rate**	**23**

CHAPTER 8: UNINTENTIONAL INJURIES

Unintentional injuries are the leading cause of death of Alaskans aged 1-44 years and the third leading cause of death for Alaskans overall. Unintentional injuries claimed the lives of 256 Alaskans in 1998. Because unintentional injuries cause the deaths of so many young people, more years of potential life are lost from injuries than from any other cause of death.[1]

The categories of injuries most prevalent in Alaska are closely related to the high-risk conditions and activities in the state. Alaska is a land of abundant waters, rugged terrain, and extreme climates. Consequently ice, darkness, cold, rural roads, limited access to medical care, reliance on a variety of vehicles (boats, airplanes, all-terrain vehicles, snow machines), and use of wood stoves contribute to high injury death rates.

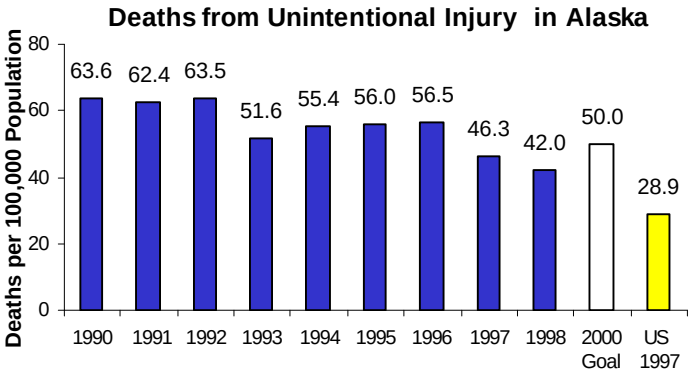
Alaska's population is younger than the national population and cultural differences influence behavior. Some believe Alaskans to be characterized by a uniquely independent and adventurous spirit. Additional risk factors for injury are the high rates of alcohol abuse in Alaska and the abundance of firearms.

DATA SUMMARY

For the data pertaining to this chapter, see Appendix D, pages D19-D21.

Injury Mortality

Death rates for all unintentional injury declined dramatically in Alaska during the 1990s. In 1990, the age-adjusted mortality rate for unintentional injuries was 63.6 per 100,000, almost double the comparable US rate of 32.5 per 100,000. By 1998, the Alaska rate had declined to 42.0 per 100,000; the Alaska rate remains higher than the US rate but the magnitude of the difference between the Alaska rate and the US rate decreased every year. The mortality rates for all unintentional injuries, unintentional injuries among Alaska Natives, and motor vehicle crash deaths met the Healthy Alaska goals. In 1998, for the first time, the motor vehicle crash death rate per 100 million miles traveled was equal to, instead of higher than, the US rate.[2]



Data Source: Alaska Bureau of Vital Statistics; Age-adjusted to 1940 US population; ICD-9 codes 800-949

The most common causes of an injury in Alaska (combining intentional and unintentional injuries for 1998) are firearms (26.2%), motor vehicles (16.9%), drowning (11.7%), poisoning (10.8%), falls (5.9%), air transport (5.2%), strangulation (5.0%), and fire/burns (4.1%).[1]

Unintentional injuries still represent a serious problem, especially among high-risk groups, which include Alaska Natives and young men. Deaths from drowning and residential fires occur more commonly in Alaska than nationally.

Injuries remain the leading cause of death for children and teens in Alaska. Injury fatalities of any kind (intentional and unintentional) made up almost half (45.8%) of all deaths among children and youth aged 0-19 years between 1991 and 1997. From 1980-1992, Alaska's rate of injury death among children ranked first among the 50 states; by 1997 the rate dropped to third place. The Alaska rate of 42.9/100,000 exceeds the comparable US rate of 26.8/100,000 by 60% (data for 1994-1997).[3]

Injury Hospitalization

Every year, approximately 3,000 Alaskans are hospitalized because of unintentional injuries. The rate of unintentional injuries resulting in hospitalization declined slightly, by about 10%, during the 1990s. Among Alaska children and adolescents aged 0-19, the most common reasons for hospitalization for unintentional injury are falls, motor vehicle crashes, sports, injuries from bicycles, all-terrain vehicles and snow machines, and playground activities.[3]

Traumatic Brain Injuries

The rate of hospitalization from traumatic brain injury declined slightly during the 1990s. The leading causes of traumatic brain injury hospitalization in Alaska are: automobile, van or truck crashes; falls; firearms; other assaults, and all-terrain vehicle or snowmobile crashes.[4] Over half (56%) of individuals sustaining a traumatic brain injury from an automobile, van or truck crash were not using appropriate restraints; similarly, 69% sustaining injuries from an all-terrain vehicle or snowmobile were not wearing helmets.[4]

Injury Prevention

The effectiveness of safety belts, helmets, smoke detectors, personal flotation devices and gun locks is well established. In 1997, one-third of Alaskan adults reported not wearing a safety belt all of the time when riding in or driving a car. Among youth, 84% of high school students and 77% of middle school students do not wear helmets when riding a bicycle. On the other hand, in 1998 only 9% of new mothers did not use a car seat for their newborns. Data on helmet use among snowmobilers and motorcyclists are not available.

RACE/ETHNICITY

Unintentional injury deaths and serious injuries occur at a disproportionate rate among Alaska Natives. In 1997, the unintentional injury death rate for Alaska Natives was 3.3 times the national rate. For example, the motor vehicle crash death rate among Alaska Natives is over twice the rate for whites (Table 8.1). During the time period 1994-1997, Alaska Native children and adolescents were killed and hospitalized due to injury at a rate over twice the rate of any other racial group in Alaska.[3]

Table 8.1: Motor Vehicle Crash Deaths by Race: Alaska 1990-98

Race	Motor Vehicle Crash Deaths	
	Rate*	(95% CI)**
White	18	(16-19)
African-American	8	(4-12)
Alaska Native	33	(29-37)
Asian/Pacific Islander	12	(7-16)

*Rate per 100,000 population; age-adjusted to US 1940 population; ICD-9 codes 810-825; data on Hispanics not available

**95% Confidence Intervals

REGIONAL DATA

Unintentional injury death rates are significantly higher in the rural regions of Alaska compared with the urban areas (Table 8.2). The rates in the Yukon-Koyukuk census area, Nome, the Northwest Arctic Borough, Haines, Bethel, Dillingham, the Lake and Peninsula Borough, and the Wade Hampton census area are two to four times that of the Anchorage Borough. The lowest rates are found in the urban areas of Anchorage, Fairbanks and Juneau.

DATA ISSUES

National statistics show that for every one injury death there are 16 hospitalized injuries and 381 injuries requiring outpatient services.[5] Through the Bureau of Vital Statistics and the Alaska Trauma Registry, population-based information is available on all injury fatalities and all injuries serious enough to require hospitalization. There is currently no statewide data system for ambulance runs, clinic and doctor office visits, or emergency department visits. A traumatic brain injury registry is now maintained beginning with 1997 data.

The Alaska Behavioral Risk Factor Surveillance System (BRFSS), the Youth Risk Behavior Survey (YRBS), and the Alaska Pregnancy Risk Assessment Monitoring System (PRAMS) are the only means of obtaining statewide data on safety equipment use in Alaska. Information is still inadequate regarding helmet use on off-road vehicles, smoke detector use, personal flotation device use, and gun lock use.

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5. DHSS, Division of Public Health, Section of Community Health and EMS. *Alaska Injury Prevention Plan*. December 1994.

Table 8.2: Age Adjusted Death Rates by Census Area
Unintentional Injury Deaths
Alaska Residents: 1990-1998

Region/Census Area	Number of Deaths	Expected Number of Deaths †	Average Population	Age Adjusted Mortality Rate	Lower Confidence Limit	Upper Confidence Limit
Anchorage/Mat-Su						
ANCHORAGE BOROUGH	883	1,194.3	247,444	40.7	37.9	43.5
MATANUSKA-SUSITNA BOROUGH	232	222.7	47,302	59.7	51.8	67.6
Gulf Coast						
KENAI PENINSULA BOROUGH	228	215.0	44,895	58.2	50.5	66.0
KODIAK ISLAND BOROUGH	83	66.1	14,109	69.7	53.8	85.6
VALDEZ-CORDOVA CENSUS AREA	77	49.7	10,288	86.8	66.6	107.0
Interior						
DENALI BOROUGH	9	5.1	1,831	58.0	11.9	104.1
FAIRBANKS NORTH STAR BOROUGH	276	387.4	81,163	38.9	34.1	43.7
SOUTHEAST FAIRBANKS CENSUS AREA	48	28.7	6,215	97.4	69.2	125.6
YUKON-KOYUKUK CENSUS AREA	83	31.1	6,542	151.6	118.2	184.9
Northern						
NOME CENSUS AREA	90	40.5	8,872	117.3	92.4	142.1
NORTH SLOPE BOROUGH	58	29.0	6,744	90.0	65.9	114.2
NORTHWEST ARCTIC BOROUGH	76	29.3	6,518	140.1	107.4	172.8
Southeast						
HAINES BOROUGH	21	11.1	2,301	116.2	64.4	168.1
JUNEAU BOROUGH	100	140.2	28,572	38.7	30.7	46.7
KETCHIKAN GATEWAY BOROUGH	72	72.7	14,472	56.8	43.2	70.5
PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	47	31.7	6,716	81.1	57.1	105.1
SITKA BOROUGH	46	42.2	8,833	55.1	38.6	71.7
SKAGWAY-HOONAH-ANGOON CENSUS AREA	25	19.3	4,492	61.2	36.4	85.9
WRANGELL-PETERSBURG CENSUS AREA	46	36.3	7,200	67.6	47.3	87.9
Southwest						
ALEUTIANS EAST BOROUGH	12	9.4	2,276	59.0	24.4	93.6
ALEUTIANS WEST CENSUS AREA	26	31.4	7,368	56.0	27.3	84.7
BETHEL CENSUS AREA	162	68.3	14,835	128.4	108.1	148.6
BRISTOL BAY BOROUGH	8	4.2	1,363	72.8	16.0	129.6
DILLINGHAM CENSUS AREA	49	19.6	4,351	135.3	96.0	174.7
LAKE AND PENINSULA BOROUGH	28	7.1	1,787	186.4	115.7	257.0
WADE HAMPTON CENSUS AREA	58	28.0	6,497	105.0	76.6	133.4
TOTAL	2,844	2,844.0	592,986	55.1	53.0	57.2

* Rates are per 100,000 population and are age-adjusted to the U.S. 1940 standard population: ICD-9 codes 800-949.

† Expected number of deaths is calculated by multiplying the state age specific rates to the area's population. Thus it is the number of deaths that would have occurred if the rate in the area were the same as the state rate.

Unintentional Injury Deaths
Alaska (1990-98)

Number of Deaths	**2844**
Age-Adjusted Rate**	**55.1**

CHAPTER 9: OCCUPATIONAL SAFETY AND HEALTH

Between 1984 and 1993, Alaska experienced 28.0 worker deaths for every 100,000 workers employed in the state, a rate more than five times the national rate of 5.0.[1] In comparison, Norway, also a northern country with a similar industrial composition to Alaska, had a rate of 4/100,000 workers.

After identifying Alaska as the highest-risk state in the US for job-related traumatic fatalities, the National Institute for Occupational Safety and Health (NIOSH) responded by establishing a research field station in Anchorage in 1991, and designed and implemented a comprehensive surveillance system for fatal and non-fatal occupational injuries, the Alaska Occupational Injury Surveillance System (AOISS). AOISS obtains risk factor information and permits quantitative epidemiologic analyses to be used for sound public health and prevention planning.

In 1992, the Section of Epidemiology established the Occupational Injury Prevention Program (OIPP) that administers the Alaska Fatality Assessment and Control Evaluation (FACE) program under a cooperative agreement with NIOSH. The OIPP focuses on preventing workplace fatalities and injuries, especially in construction, skilled trades, logging, and other industrial settings. Due to the frequency of deaths related to commercial fishing and aviation, NIOSH-Alaska Field Station is focusing research efforts on these industries.

Strong relationships have been established among the many federal, state, municipal, and non-governmental agencies that are engaged in detecting, investigating and/or preventing occupational injuries and fatalities. These relationships, formalized within the Alaska Interagency Working Group for the Prevention of Occupational Injuries, have fostered injury surveillance, a broader understanding of occupational injuries in the state, and an opportunity to effectively influence the immediate response to emerging occupational injury problems (e.g., helicopter logging fatalities, drownings from man-overboard events, and occupational homicides) in the state. In addition to surveillance and investigation activities, in-depth studies have been focusing on identifying and reducing risks associated with commercial fishing, logging and air transport in Alaska.

Data Source: NIOSH/Alaska FACE

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D22-D23.

Occupational Fatalities

In 1999, 42 workers died from job-related injuries in Alaska. Commercial fishing (17 deaths) and air/marine transport (10 deaths) led Alaska industries in the number of work-related fatalities.[2]

During the time period 1990 through 1999, the rate of death per 100,000 workers in Alaska declined by 55%, from 29.5/100,000 workers to 13.4/100,000 workers[2]. The Healthy Alaskans 2000 goal of a 15% reduction has not only been achieved, but exceeded. The declining occupational injury fatality rates are evidence that injury control programs begun by state and federal agencies during the 1980s and 1990s are now bearing fruit. While Alaska's harsh environment will not change, the efforts to reduce occupational injuries have lead to better training, greater employer and worker awareness, and improved technology.

For example, a decline in deaths in the commercial fishing industry, which historically has experienced the greatest number of worker deaths in Alaska, occurred primarily by saving lives after a vessel casualty. Fishermen now generally know how to use the safety equipment required by the Commercial Fishing Industry Vessel Safety Act and therefore members of the Coast

Guard are often able to rescue them.[3] As another example, from January 1, 1992 through June 30, 1993, helicopter-logging pilots had the highest risk occupation in Alaska. Because of an interagency intervention in July 1993, Alaska experienced a marked decrease in helicopter-logging-related fatalities.[4]

Occupational Injury Hospitalizations

The rate of work-related injuries requiring hospitalization also fell during the 1990s among construction workers, transportation workers, commercial fishers and loggers. The rate among commercial fishers fell by 42% and among loggers by 30%.

Non-Fatal Lost Workday Injuries and Illnesses

There has been a slight decline in the rate of nonfatal lost workday injuries and illnesses. The rate declined from 4.3/100 workers to 3.9/ 100 workers, a 10% decline. Among loggers, the rate of lost workdays due to injury and illness declined by 42%, similar to the magnitude of decline found for fatalities and hospitalizations among loggers. Alaska's rate of lost workdays due to work-related injuries and illnesses (3.9 per 100 workers) remains higher than the comparable national rate (3.1 per 100 workers).

RACE/ETHNICITY

The occupational injury fatalities suffered by workers during the time period 1991-1997 occurred in rough proportion to their presence in the Alaskan workforce (although precise race/ethnicity- and occupation-specific workforce estimates are not available): 415 of the decedents were white, with occupational distribution similar to those for decedents overall; 39 decedents were Alaska Native (including 15 fishermen and 4 pilots), 20 Asian/Pacific Islanders (including 9 deckhands and 4 fishermen), 4 African Americans, and 3 of unknown race/ethnicity.[4]

REGIONAL DATA

Occupational injury fatalities by Census area are shown in Table 9.1. The data are shown by census area of occurrence, rather than by residence. As such, regional variations are related to several different factors, including proximity to high-risk occupations, such as commercial fishing or logging, population density, and climate.

DATA ISSUES

More accurate occupation-specific workforce denominators would be helpful, as would more complete information on self-employed and contract personnel.

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4. Alaska Field Station, Division of Safety Research, NIOSH, CDC.

Table 9.1: Occupational Deaths by Census Area: 1991-1999*

Region	Census Area	Number of Deaths*
Anchorage/ Mat Su	ANCHORAGE BOROUGH	50
	MATANUSKA-SUSITNA BOROUGH	15
Interior	FAIRBANKS NORTH STAR BOROUGH	30
	SOUTHEAST FAIRBANKS CENSUS AREA	5
	YUKON-KOYUKUK CENSUS AREA	16
	DENALI BOROUGH	9
Gulf Coast	KENAI PENINSULA BOROUGH	44
	KODIAK ISLAND BOROUGH	33
	VALDEZ-CORDOVA CENSUS AREA	27
Northern	NOME CENSUS AREA	16
	NORTH SLOPE BOROUGH	20
	NORTHWEST ARCTIC BOROUGH	8
Southeast	HAINES BOROUGH	5
	JUNEAU BOROUGH	26
	KETCHIKAN GATEWAY BOROUGH	20
	PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	26
	SITKA BOROUGH	7
	WRANGELL-PETERSBURG CENSUS AREA	13
	SKAGWAY-HOONAH-ANGOON CENSUS AREA	22
	YAKUTAT BOROUGH	15
Southwest	ALEUTIANS EAST BOROUGH	58
	ALEUTIANS WEST CENSUS AREA	50
	BETHEL CENSUS AREA	12
	BRISTOL BAY BOROUGH	9
	DILLINGHAM CENSUS AREA	14
	LAKE AND PENINSULA BOROUGH	9
	WADE HAMPTON CENSUS AREA	7

*****Numbers are by census area of occurrence
Total Alaska occupational deaths 1991-1999 = 566
Date Source: NIOSH/Alaska FACE

CHAPTER 10: ENVIRONMENTAL HEALTH

The quality of Alaska's air and water resources are unrivaled in the nation. Alaskan's health depends on these clean resources. Keeping our environment robust can only happen through cooperation between the Alaska Department of Environmental Conservation (ADEC), citizens, and businesses. ADEC, among other things, assists communities with maintaining safe drinking water, good air quality, effective waste management, and proper pesticide use.

DATA SUMMARY

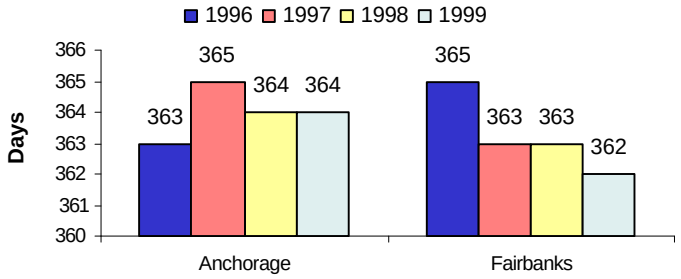
For all the data pertaining to this chapter, see Appendix D, pages D24-D25.

Safe Water

According to the 1990 census, 65.6% of Alaskan housing units were serviced by a public water system, 24.1% used wells, and 10.3% used some other acceptable method. Therefore, 89.7% of all housing units used a safe source for their drinking water. However, many Alaskans living in rural Alaska still are without acceptable safe water systems. In 1998, 5,569 homes in rural Alaskan villages still did not have a piped water system or an enclosed haul program. This information was collected by ADEC's Village Safe Water Program.

Alaska has an estimated 365,000 miles of rivers and approximately three million lakes that cover about 12,787,200 surface acres, and 33,203 square miles of estuary. Alaska's 1998 impaired water body list includes fifty-eight water bodies that have unsafe pollution levels. The highest percentage is polluted from urban-related sources such as dog waste, leaking septic systems, and urban run-off from city streets carrying dirt and oil. The second largest pollution source in Alaska is related to timber harvesting, primarily from log transfer facilities in Southeast marine waters. Thirteen water body segments were removed from the list of polluted water bodies in 1996; however 16 new ones were added in 1998.

Days of Acceptable Levels of Carbon Monoxide: Alaska Cities 1996-1999



Data source: DEC, Air and Water Quality Program

Safe Air

Air pollution has been linked to a variety of health problems. Particulate matter can cause diseases such as emphysema, bronchitis, asthma and premature death. Coarse particles (10 microns in diameter - PM10) and fine particles (2.5 microns in diameter - PM2.5) are currently regulated (the PM2.5 standard is currently under litigation). In Alaska, PM10 typically comes from wind blown dust (glacial silt), volcanoes, and dirt roads. PM2.5 is man made and comes from wood burning stoves, open burning, home heating, diesel and gas vehicles. Three areas in Alaska have had a historical problem with particulates: Juneau's Mendenhall Valley, Eagle River in the Municipality of Anchorage, and the Matanuska-Susitna Valley.

Another air pollutant currently regulated is carbon monoxide. Alaska's cold climate contributes to air pollution problems, especially carbon monoxide levels. Approximately eighty percent of the winter carbon monoxide in cities is from vehicle emissions. Anchorage and Fairbanks have failed to achieve the air quality standard for carbon monoxide. To be eligible for re-designation, each city must not exceed the standard for two years. Anchorage met the requirements, but has not been re-designated. A new air quality plan must be developed before Anchorage can be re-designated. If the two cities do not meet these standards by December 31, 2000 additional controls will be required.

Healthy Communities

The 1990 census found that 62.3% of all housing units were connected to a public sewer system. More than 25% used individual septic tanks. Therefore, 88% of all housing units had access to a public or private sewage system. The remaining 12% used an alternative, such as honeybuckets. Creating acceptable sewage systems for every Alaskan, and making honeybuckets obsolete is a priority of ADEC.

Alaskans generate twice the national average of solid waste. Alaska's eight largest communities, which produce 75% of the waste, use solid waste facilities that meet comprehensive requirements for the design and operation of landfills. Only one-quarter of the rural communities have properly designed and operated solid waste facilities. Substandard landfills can result in contaminated surface and groundwater, animal foraging, and windblown litter over the surrounding landscape. In order to prevent landfills and dumps from damaging the environment, standards have been established to ensure they are designed, maintained, and operated appropriately.

Pesticides are used in Alaska in urban, rural and industrial areas. In 2000, 970 applicators were trained and certified in 13 categories to use pesticides commercially and on farms. 3,112 pesticides are registered for sale in Alaska with 863 classified as dangerous based on toxicity. Through training and outreach, DEC is reducing the risk of exposure to pesticides and contamination of the environment.

DATA ISSUES

We do not have complete information about rural villages that don't exist within municipalities because they typically do not collect taxes. Tax assessments are the most accurate way to document local resources.

The 1990 national census assessed housing units rather than population. Therefore, it is not valid to compare this information to population related data. Also, the census surveyed summer cabins, most of which by design do not have water or sewer systems. This may inflate results.

CHAPTER 11: FOOD SAFETY

Alaska's Department of Environmental Conservation, Division of Environmental Health, has the responsibility for assuring the safety of Alaska's commerical food supplies. A variety of food products are processed in Alaska, including milk, meat, syrups, candies, and bottled water. Alaska has 10 milk producers, two milk processors, and 22 meat processors including the only reindeer slaughter facility in the US.

In 1999, there were 3,411 food service establishments (including school kitchens and Head Start programs), 813 food markets, 132 food processors, 532 school facilities, and 500 temporary food services in Alaska. In 1999, 40% of all permitted food facilities were inspected at least once, down from 65% in previous years.[1]

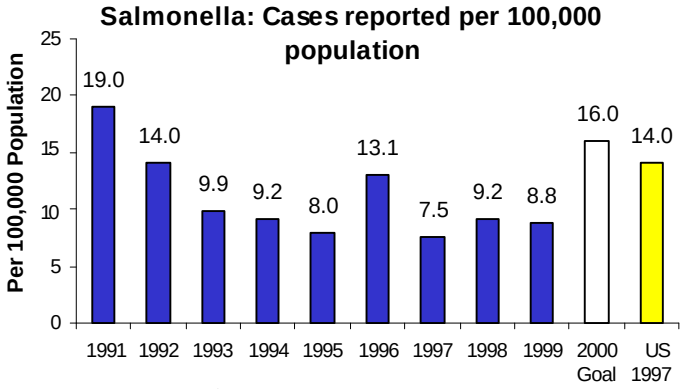
Consumption of seafood has reached an all-time high and Alaska is the source of 56% of all seafood processed in the U.S. In 1999, 267 distinct seafood facilities were inspected a total of 626 times. DEC performs inspections based on the risk associated with the food being processed, which requires multiple inspections of the same facility during different processing.

Foodborne diseases are illnesses that occur after eating contaminated food. Foodborne outbreaks are recognized by the occurrence of illness among a group of persons usually within a short time after food consumption. Suspected cases are reported to the Alaska Division of Public Health, Section of Epidemiology. However, foodborne illnesses are dramatically underreported.

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D26-D27.

The most common causes of foodborne outbreaks in Alaska are temperature abuse and ill food handlers.[2] A variety of organisms have been found, including hepatitis A, salmonella, shigella, and staphylococcus.



Data Source: Section of Epidemiology

Each year Alaska has outbreaks of foodborne botulism and paralytic shellfish poisoning which are potentially life-threatening emergencies. Between 1987 and 1999, there have been 130 cases of botulism and 92 cases of paralytic shellfish poisoning. In addition, there have been 80 cases of trichinosis, from consumption of bear or walrus meat.[2] None of these illnesses were associated with inspected food products.

Most infectious disease data are based on reports made by physicians, other health care providers and medical laboratories to the Division of Public Health. Because only a portion of ill persons seek treatment and because some persons diagnosed with a disease may not be reported, the case numbers represent variable proportions of the true burden of disease in the state.

Escherichia coli 0157:H7, the cause of hemolytic uremic syndrome, became reportable in Alaska in 1996. As of the end of 1999, there have been 25 cases reported.

Alaska harvests approximately 5 billion pounds of seafood annually. Because of contamination or incorrect processing, 60,200 pounds of food products (seafood, milk, meat and poultry combined) were detained, and 28, 414 pounds destroyed before reaching consumers in 1999. In 1998, 680,006 pounds of food products were detained and 234,442 pounds destroyed.[1]

DATA ISSUES

Reportable foodborne illnesses in Alaska are:

- Amebiasis
- Botulism
- Brucellosis
- Campylobacteriosis
- Cholera
- Crytosporidiosis
- Escherichia coli 0157:H7
- Giardiassis
- Hepatitis A
- Paralytic shellfish poisoning
- Salmonellosis
- Shigellosis
- Trichinosis
- Tularemia
- Yersiniosis

REFERENCES

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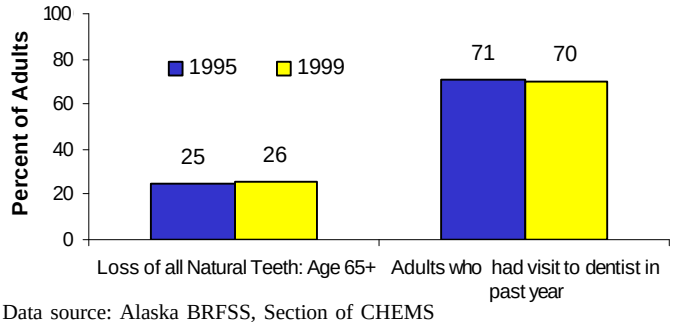
2. Section of Epidemiology. April is Food Safety Awareness Month. Epi Bulletin #16 1997.

CHAPTER 12: ORAL HEALTH

Oral diseases are among the most common health problems in the United States. Nationally, among school age children, 45% have caries in their permanent teeth.[1] Among adults, 94% show evidence of past or current tooth decay.[2] Over 90% of people aged 13 and over show some evidence of periodontal problems.

Despite the importance of oral health problems, Alaska has no statewide program dealing with the oral health of the population. The provision of oral health services in Alaska is largely done by private, fee-for-service dental professionals, and by the Alaska Native non-profit health corporations. There is little involvement of state agencies except through Medicaid reimbursement and coordination of dental screenings through Head Start and Public Health Nursing. The Alaska Area Native Health Service is undertaking a second oral health survey which will follow-up on the results found in 1991.

Oral Health Indicators: 1995 and 1999



Data source: Alaska BRFSS, Section of CHEMS

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D28-D30.

Cavities in Children

Cavities are common in the primary and permanent teeth of children in Alaska and in the United States. Virtually all of the 15 year olds screened by the Indian Health Service in 1991 had one or more cavities in the permanent teeth, and 50% were found to have untreated cavities.

Protective Sealants

The 1991 Indian Health Service Oral Health Survey found that 66% of 8 year old and 70% of 14-15 year old Alaska Native children have had protective sealants applied to one or more permanent molars. These numbers compare favorably to national data on the general population and exceed the Healthy Alaskans 2000 goal of 50%.

Loss of Natural Teeth

In 1999, the BRFSS survey found that 26% of Alaskans aged 65 and older were edentulous; the estimate did not change substantially from the 1995 estimate of 25%. The Indian Health Service Oral Health Survey found that 40% of elders were edentulous in 1991.

Water Systems

Updated information on community water systems providing optimal levels of fluoride are not readily available. The Alaska Area Native Health Service and Department of Enviromental Conservation have information on communities with water fluoridation programs. Currently, there are not standard reports on communities that maintain optimal levels of fluoride. Maintaining an optimal level of fluoride in the water is important as lower concentrations do not achieve maximum reduction in caries and higher concentrations can cause fluorosis in teeth (white flecking in enamel is the most common form of fluorosis).

Baby Bottle Tooth Decay

In 1991, 26% of Alaska Native children aged 0-4 were found to have evidence of baby bottle tooth decay. The special study of Jones, et al, found that 4% of non-Native children had evidence of baby bottle tooth decay.[3]

Annual Use of Oral Health System

Approximately 70% of Alaska adults reported having had at least one visit to a dentist or dental clinic in the past year. The estimate has not changed substantially between 1995 and 1999. Data are not available on the proportion of Alaska children receiving a dental visit in the past year.

DATA ISSUES

Data on differences in oral health by race/ethnicity and by region are largely unavailable. With the exception of people served by the Alaska native non-profit health corporations, Alaska data on the oral health indicators are not collected. The Alaska Area Native Health Services is currently undertaking another Oral Health Survey. The BRFSS collects some self-reported data on adults.

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CHAPTER 13: MATERNAL, INFANT AND CHILD HEALTH

Maternal, infant and child health focuses on the cycle of reproduction, growth and development. Its goal is to improve the health of women, children and families.

In 1998, several legislative initiatives were approved in Alaska to develop a comprehensive, interdisciplinary plan to protect children, invest in proven prevention programs to break the cycle of family violence and, ultimately, save money by reducing costs associated with crime, health care and welfare. One outcome of this initiative is the Denali Kid Care program, which is currently providing health care coverage to low income children and pregnant women not otherwise eligible for Medicaid.

DATA SUMMARY

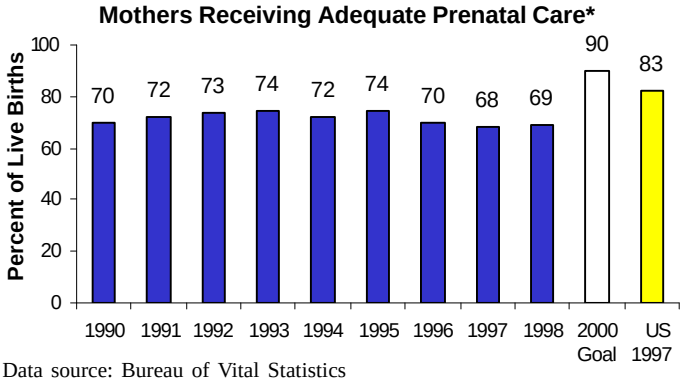
For all the data pertaining to this chapter, see Appendix D, pages D31-D33.

Infant and Child Mortality

In recent years, both the US and Alaska infant mortality rates have been steadily decreasing. Alaska's rate is the lowest ever recorded in the state and has reached the Healthy Alaskan 2000 goal.[2] Infant mortality among Alaska Natives, even though declining, remains high.

Alaska's post-neonatal mortality rate (deaths occurring from the 28th day of life up to one year), though on the decline, is still higher than the national post-neonatal mortality rate. Alaska leads the nation in infant deaths due to Sudden Infant Death Syndrome (SIDS).[3] Placing infants on their backs to sleep is the single most important step parents and caregivers can take to reduce the risk of SIDS. The percent of mothers of newborns who put their infants to sleep on their backs increased from 41% in 1996 to 59% in 1998.

The mortality rate for Alaskan children age 1-4 years has remained fairly stable over the past decade. The 1998 Alaska rate of 35.8/100,000 children is similar to the US rate of 34.6 per 100,000 children. Injuries are the most common cause of death in this age group.



Data source: Bureau of Vital Statistics
*Defined using modified Kessner Index

Domestic Violence and Child Abuse

Physical abuse of some kind is estimated to affect over 19,000 women per year in Alaska. Children in homes in which domestic violence is occurring are at increased risk for abuse and neglect.

The Pregnancy Risk Assessment Monitoring System (PRAMS) data for 1996-1997 indicates that 10 percent of women were abused either during the 12 months before pregnancy or during pregnancy. This problem is more acute among Native women (19%) than non-Native women (7%) and among teenagers (22%) than older women (10%).[4]

During Fiscal Year 1999, the Division of Youth Services received over 16,000 reports of harm to children. Of these, 57.7% were reports of neglect and 36.6% were reports of physical or sexual abuse. The total number of reports increased during the 1990s, but the rate of children with reports of harm per 1,000 children has remained fairly constant since 1993.[3]

Teen Births

Nationally and in Alaska, the birthrate among teens declined in the 1990s. Alaska has had one of the largest percent declines in teen births of any state in the United States.[4] The live birth rate for teens aged 15-19 has reached the Healthy Alaskans 2000 goal of 50 per 1,000 girls aged 15-19 (48.4 in 1998). Data from the Centers for Disease Control and Prevention indicate that the decline in births is not due to an increase in abortion, as abortion rates have also declined.[5]

Prenatal Substance Use

In Alaska, the proportion of women who smoke during pregnancy appeared to decrease slightly during the 199os, but has not reached the Healthy Alaskans 2000 goal of less than 15%. Research reported by the US Surgeon General indicates that 5% of perinatal deaths, 20% of low birth-weight babies, and 8% of pre-term deliveries could be avoided annually in Alaska if maternal smoking were eliminated.[6]

Prenatal exposure to alcohol is associated with a wide range of infant outcomes from full Fetal Alcohol Syndrome (FAS) to very subtle effects. The percent of mothers of newborns reporting alcohol use in the last three months of pregnancy has decreased from about 10% to 4% during the 1990s, and has achieved the Healthy Alaskans 2000 goal of less than 5%. A special study on FAS in Alaska found that the prevalence of the syndrome is higher among Alaska Natives than among non-Natives. Lack of a consistent case definition for FAS complicates comparison of Alaska data to national data.

Reported use of marijuana and cocaine during pregnancy appears to be decreasing.

Prenatal Care

Adequacy of prenatal care is defined by the Institute of Medicine's Kessner Index as care that began in the first trimester of pregnancy and having at least 9 visits for a normal-length pregnancy.[7] Lack of prenatal care is associated with an increased risk for low birth weight infants, preterm delivery, and maternal and infant mortality.[8] Overall, the rate of adequate prenatal care for pregnant women has declined since 1994. Rates of adequate prenatal care are lower among teenage mothers and among Alaska Native mothers. No groups have reached the Healthy Alaskans 2000 goal of over 90%.

RACE/ETHNICITY

The highest rates of childhood mortality are found among Alaska Natives (Table 13.1). The rate for Alaska Native children is 3.5 times as high as the rate for white children. The rates for African-American and Asian/Pacific Islander children are comparable to the rate for white children.

Table 13.1: Childhood Mortality by Race: 1990-1998

Race	Deaths among children aged 1-4 years	
	Rate*	(95% CI)**
White	33	(26-40)
African-American	30	(6-54)
Alaska Native	116	(94-139)
Asian/Pacific Islander	33	(7-59)

*Deaths per 100,000 children aged 1-4; ICD codes 000-999; data on Hispanics not available

**95% Confidence Intervals

REGIONAL DATA

None of the Alaska census area regions have reached the Healthy Alaskans goal for at least 90% of women to have received adequate prenatal care (Table 13.2). In general, the women living in the more urban areas of Anchorage, Juneau and Mat-Su were more likely to receive adequate prenatal care, but rates were also high in the rural areas of Aleutians East, Bristol Bay Borough and Ketchikan Gateway Borough.

DATA ISSUES

Adequacy of prenatal care is not consistently defined in the literature. Because a variety of indexes are being used, it is sometimes difficult to compare data.

Currently, there is no standard case definition for FAS. As such, prior estimates of FAS prevalence are not comparable to other states. The State of Alaska and four other states are involved in a federally funded project designed to obtain comparable FAS prevalence estimates for all five states based on a standard case definition.

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Table 13.2: Adequate Prenatal Care by Census Area of Mother's Residence: 1998*

Region	Census Area***	Total Number of Births	Percent with Adequate Prenatal Care	Lower Confidence Limit	Upper Confidence Limit
Anchorage/ Mat Su	ANCHORAGE BOROUGH	4182	81	78	83
	MATANUSKA-SUSITNA BOROUGH	707	70	64	76
Interior	FAIRBANKS NORTH STAR BOROUGH	1439	63	59	67
	SOUTHEAST FAIRBANKS CENSUS AREA	106	36	25	47
	YUKON-KOYUKUK CENSUS AREA	111	36	25	47
	DENALI BOROUGH	19	47	16	78
Gulf Coast	KENAI PENINSULA BOROUGH	653	67	60	73
	KODIAK ISLAND BOROUGH	260	60	51	69
	VALDEZ-CORDOVA CENSUS AREA	133	61	48	74
Northern	NOME CENSUS AREA	207	44	35	54
	NORTH SLOPE BOROUGH	146	54	42	66
	NORTHWEST ARCTIC BOROUGH	181	51	40	61
Southeast	HAINES BOROUGH	21	48	18	77
	JUNEAU BOROUGH	394	72	64	80
	KETCHIKAN GATEWAY BOROUGH	190	74	62	87
	PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	94	50	36	64
	SITKA BOROUGH	106	53	57	90
	WRANGELL-PETERSBURG CENSUS AREA	95	67	51	84
	YAKUTAT BOROUGH	3	33	0	99
	SKAGWAY-HNH-ANGOON CENSUS AREA	32	53	28	78
Southwest	ALEUTIANS EAST BOROUGH	25	80	100	45
	ALEUTIANS WEST CENSUS AREA	43	61	37	84
	BETHEL CENSUS AREA	409	46	39	53
	BRISTOL BAY BOROUGH	17	88	44	133
	DILLINGHAM CENSUS AREA	106	49	36	62
	LAKE AND PENINSULA BOROUGH	27	63	33	93
	WADE HAMPTON CENSUS AREA	222	28	21	35

* Adequate prenatal care defined using modified Kessner index.

** Data source: Alaska Bureau of Vital Statistics, 1998 Report, Table 1.14A, page 33.

Adequate Prenatal Care
Alaska (1998)

Total Number of Births	**9,920**
Adequate Prenatal Care	**69%**

CHAPTER 14: HEART DISEASE AND STROKE

Cardiovascular disease has as its main components heart disease and stroke. Coronary heart disease is the largest component of heart disease, comprising about 80% of heart disease deaths. Each year more than 650 Alaskans die from heart disease and stroke, accounting for 27% of all Alaskan deaths in 1998.[1] Heart disease was the leading cause of death among men and the second leading cause among women in 1998; stroke was the fifth leading cause among men and the third leading cause of death among women. Among Alaska Natives, heart disease was the second leading cause of death, and stroke was the fifth leading cause. Alaska Native people now have higher death rates from heart disease and stroke than do non-Natives.

Risk factors for heart disease and stroke include poor nutrition, tobacco use, lack of physical activity, high blood pressure, elevated cholesterol, obesity and diabetes. Many of these risk factors are preventable through healthy lifestyles and good preventive medical care. Furthermore, the healthy lifestyles that prevent heart disease and stroke also prevent other health problems, such as cancer, diabetes, arthritis, and depression.[2]

Despite the fact that the risk factors are modifiable, the data indicate that many Alaskans remain at risk for heart disease and stroke.[3]

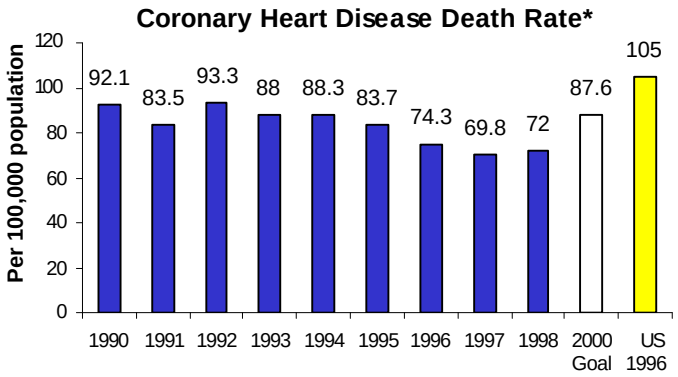
"Take Heart Alaska!" is a new statewide coalition of individuals, agencies, and organizations. The overall goal of the coalition is to increase heart health among all Alaskans through advocating for individual and community-based commitment to healthy lifestyles and improving access to preventive services.[2]

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D34-D35.

Heart Disease and Stroke Mortality

The death rate from coronary heart disease continued its decline during the 1990s. The Healthy Alaskans 2000 goal has been surpassed. The Alaskan rate is lower than the US rate. Stroke mortality rates have remained fairly constant; the goal of achieving a 10% reduction has not been reached.



Data source: Bureau of Vital Statistics
*Age-adjusted to US 1940 population; ICD-9 codes 402, 410-414, 429.2

Risk Factors for Heart Disease and Stroke

Alaska data on the proportion of people who have high cholesterol and/or high blood pressure who are aware of their conditions and taking action are not available. Nationally, approximately 70% of people who have high blood pressure are taking some action (medication, diet, low salt and/or exercise) to reduce their blood pressure.[4] In addition, nationally, the proportion of people with high cholesterol who are aware of their condition increased from 30% in 1988 to 60% in 1995.[4]

Overweight is increasing among Alaskans, from a prevalence of 25% of adults in 1991 to 38% in 1999. National data also show a trend in the wrong direction. Smoking has remained constant during the 1990s in Alaska. Similarly, the proportion of Alaskans engaging in physical activity has not increased during the 1990s. Approximately 60% of Alaskan adults report having had their cholesterol checked in the past 5 years. The Healthy Alaskans 2000 goal of 75% or higher has not been reached.

RACE/ETHNICITY

Alaska Natives are the least likely to report having had a cholesterol test in the past 5 years. Rates are also low among Asian/Pacific Islanders and Hispanics (Table 14.1).

Table 14.1: Cholesterol checked in past 5 years among adults by Race/Ethnicity

Race / Ethnicity	Adults who had cholesterol checked in past 5 years* Percent	(95% CI)***
White	65	(63-66)
African-American	70	(61-79)
Alaska Native	42	(39-45)
Asian/Pacific Islander	51	(42-59)
Hispanic**	53	(45-61)

*Alaska BRFSS 1991,92,93,95, 97, 99
**Hispanic can be of any race
***95% Confidence interval

REGIONAL DATA

The mortality rates from coronary heart disease do not vary by region as widely as some cause of death data, such as injuries. Slightly higher rates than the state rate are found in Mat-Su, Fairbanks North Star and South-east Fairbanks Boroughs, as well as Nome, Skagway-Yakutat-Angoon, Aleutians East and Aleutians West.

DATA ISSUES

Although we have data on deaths from heart disease and stroke, we do not have data about how many people are actually developing these problems. The decrease in mortality may be because of improved preventive measures in the population, but may also be attributed to improved treatment once a person develops heart disease and stroke. A data source such as hospital discharge data would be helpful on a statewide basis to monitor the number of people admitted to the hospital for heart disease, stroke and other conditions.

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Table 14.2: Age Adjusted Death Rates by Census Area
Coronary Heart Disease Deaths
Alaska Residents: 1990-1998

Region/Census Area	Number of Deaths	Expected Number of Deaths †	Average Population	Age Adjusted Mortality Rate	Lower Confidence Limit	Upper Confidence Limit
Anchorage/Mat-Su						
ANCHORAGE BOROUGH	1,243	1,292.5	247,444	79.1	74.6	83.6
MATANUSKA-SUSITNA BOROUGH	328	282.8	47,302	94.0	83.7	104.4
Gulf Coast						
KENAI PENINSULA BOROUGH	312	293.3	44,895	85.9	76.3	95.5
KODIAK ISLAND BOROUGH	69	65.2	14,109	89.1	67.7	110.5
VALDEZ-CORDOVA CENSUS AREA	67	63.3	10,288	84.9	64.3	105.5
Interior						
DENALI BOROUGH	8	5.3	1,831	65.9	14.3	117.4
FAIRBANKS NORTH STAR BOROUGH	417	370.3	81,163	92.0	83.0	101.0
SOUTHEAST FAIRBANKS CENSUS AREA	44	36.8	6,215	98.6	69.0	128.3
YUKON-KOYUKUK CENSUS AREA	47	48.0	6,542	82.2	58.2	106.1
Northern						
NOME CENSUS AREA	67	56.3	8,872	97.3	73.5	121.0
NORTH SLOPE BOROUGH	33	30.9	6,744	78.9	51.4	106.4
NORTHWEST ARCTIC BOROUGH	37	35.8	6,518	84.1	56.5	111.8
Southeast						
HAINES BOROUGH	19	20.8	2,301	77.9	42.2	113.6
JUNEAU BOROUGH	161	195.5	28,572	68.6	57.8	79.5
KETCHIKAN GATEWAY BOROUGH	122	121.5	14,472	83.2	68.0	98.4
PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	38	38.2	6,716	75.0	50.3	99.7
SITKA BOROUGH	78	74.6	8,833	83.3	64.0	102.7
SKAGWAY-HOONAH-ANGOON CENSUS AREA	41	33.1	4,492	100.1	68.9	131.2
WRANGELL-PETERSBURG CENSUS AREA	68	67.1	7,200	80.9	60.8	100.9
Southwest						
ALEUTIANS EAST BOROUGH	13	8.2	2,276	109.1	28.6	189.7
ALEUTIANS WEST CENSUS AREA	21	17.0	7,368	91.3	46.6	136.1
BETHEL CENSUS AREA	57	85.9	14,835	52.3	38.4	66.2
BRISTOL BAY BOROUGH	2	0.9	1,363	*	*	*
DILLINGHAM CENSUS AREA	25	26.6	4,351	84.5	50.5	118.6
LAKE AND PENINSULA BOROUGH	11	10.0	1,787	84.6	33.8	135.3
WADE HAMPTON CENSUS AREA	14	34.3	6,497	33.3	15.7	50.9
TOTAL	3,343	3,343.0	592,986	81.9	79.1	84.8

* For number of deaths equal to 4 or less, rates are not presented

** Rates are per 100,000 population and are age-adjusted to the U.S. 1940 standard population: ICD-9 codes 402, 410-414, 429.2

† Expected number of deaths is calculated by multiplying the state age specific rates to the area's population. Thus it is the number of deaths that would have occurred if the rate in the area were the same as the state rate.

Coronary Heart Disease Deaths
Alaska (1990-98)

Number of Deaths	**3343**
Age-Adjusted Rate**	**81.9**

CHAPTER 15: CANCER

Cancer is the leading cause of death among Alaskans, accounting for 25% of all deaths in 1998.[1] In the United States, approximately 47% of all men and 38% of all women will develop cancer at some point in their lives.[2]

The most common cancers diagnosed in Alaska are breast, lung, prostate and colorectal cancer.[3] Among Alaska Natives the most common cancers are the same, but the order is different (colorectal, lung, breast and prostate cancers).[4] The most common cancer cause of death among all Alaskans is lung cancer.

Cancer remains a major health problem in Alaska and in the United States. There is evidence that perhaps as much as 50% of cancers could be prevented through smoking cessation and changed dietary habits.[5] Furthermore, early detection and treatment for some cancers can prevent morbidity and mortality.

DATA SUMMARY

For the data pertaining to this chapter, see Appendix D, pages D36-D39.

Cancer Mortality Rates

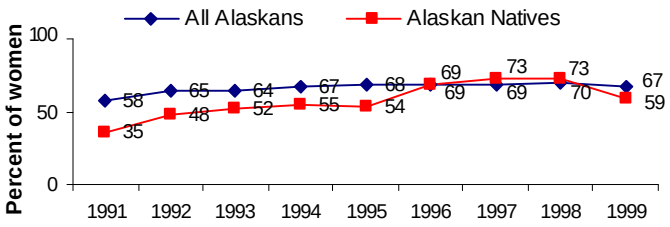
Alaska's death rate for all cancers has remained fairly constant throughout the 1990s, and remains above the Healthy Alaskans 2000 goal. The lung cancer mortality rate did not increase during the 1990s, and reached the Healthy Alaskans goal of not increasing above 50 per 100,000 population. Death rates from breast cancer have declined and are below the Healthy Alaskans 2000 goal.

There has been a decline in deaths from cervical cancer, both among Alaska Native and non-Native women. Deaths from colorectal cancer have remained fairly constant.

Cancer Mortality Rates

In 1996, the Alaska Cancer Registry began collecting data on all new diagnoses of cancer. Data for 1996 and 1997 are now available.[6,7] Although it is too early to describe trends in the data or to make conclusions related to causation, prevention, early detection and treatment, the results are valuable in that they show Alaska's cancer incidence to be similar to that for the United States.

Mammography and Breast Exam in past 2 Years among Women aged 40 and older



Data Source: Alaska BRFSS; No Alaska or US objective for this indicator.

Clinical Preventive Services

There has been an increase in the proportion of women 40 and older who have had a mammogram and clinical breast exam in the past two years, especially among Alaska Native women, women of low income, and women with less than a high school education. There has also been an increase in the proportion of women aged 50 and older who have received a mammogram and breast exam in the past two years. Pap test utilization, while high among the general population, has similarly increased among Alaska Native women, low income women, women with less than a high school education and older women. In 1997, approximately 41% of Alaska adults report having had a proctosigmoidoscopy, not significantly changed from the 1993 value of 37%. However, this does reach the Healthy People 2000 goal of 40%.

RACE/ETHNICITY

The highest mortality rate for all cancers is found among Alaska Natives and African-Americans (Table 15.1). The lowest rates are found among Asian/Pacific Islanders. The most common cancer cause of death among all racial groups is lung cancer. The highest mortality rates from lung cancer are found among Alaska Natives and African-Americans. Colorectal cancer mortality is highest among Alaska Natives, whereas the highest breast and prostate cancer mortality rates are found among African-Americans.

Table 15.1: Cancer Mortality by Race: Alaska 1990-98*

Race**	**All Cancers** (95% CI)*** ICD-9 140-208	**Lung Cancer** (95% CI) ICD 9 162	**Colo-rectal Cancer** (95% CI) ICD-9, 153, 154.0-154.3, 154.8, 159.0	**Breast Cancer**** (95% CI) ICD-9 174	**Prostate Cancer***** (95% CI) ICD-9 185
White	163 (158-169)	52 (48-55)	16 (14-18)	23 (21-26)	22 (19-26)
African-American	187 (153-221)	64 (44-84)	21 (10-33)	35 (15-56)	48 (20-77)
Alaska Native	204 (191-216)	62 (55-69)	29 (24-34)	20 (14-25)	9 (5-14)
Pacific Islander	84 (68-100)	17 (10-24)	5 (1-8)	9 (3-14)	8 (-1-17)

*Deaths per 100,000 population; age-adjusted to US 1970 population;
**Data on Hispanics not available
***95% Confidence Intervals
****Deaths per 100,000 females
*****Deaths per 100,000 males

REGIONAL DATA

Cancer mortality rates do not differ as markedly by census area as do injury rates. For example, there is a five-fold increase (500%) between the state rate and the rate for the highest census area when looking at firearm-related deaths. However, for cancer there is a much smaller difference, ranging from 20 to 30%, between the regions with the highest rates (Yukon-Koyukuk Census Area, North Slope Borough, Lake and Peninsula Borough, and Wade Hampton Census area) and the state rate. Because lung cancer is the leading cancer cause of death, in general the census areas with the highest cancer mortality rates are also those with the highest lung cancer death rates (see Table 3.3).

DATA ISSUES

The Alaska Native Cancer Registry has collected data on all new cases of cancer among Alaska Natives for 25 years. In addition, a statewide registry, the Alaska Cancer Registry, has been collecting information since 1996 and has now published 2 reports. Both registries are collaborating to develop a complete picture of cancer in Alaska. In the coming years, the Alaska Cancer Registry will be able to describe trends in new cases of cancer, rather than relying on mortality data, which only describes deaths from cancer. The Alaska Native Cancer Registry will provide data on Alaska Natives, including survival information and how that may differ from non-Natives.

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Table 15.2: Age Adjusted Death Rates by Census Area
Cancer Deaths
Alaska Residents: 1990-1998

Region/Census Area	Number of Deaths	Expected Number of Deaths †	Average Population	Age Adjusted Mortality Rate	Lower Confidence Limit	Upper Confidence Limit
Anchorage/Mat-Su						
ANCHORAGE BOROUGH	2,007	2003.7	247,444	165.1	157.4	172.9
MATANUSKA-SUSITNA BOROUGH	442	434.8	47,302	165.6	149.3	182.0
Gulf Coast						
KENAI PENINSULA BOROUGH	490	450.4	44,895	187.4	169.9	204.9
KODIAK ISLAND BOROUGH	106	101.6	14,109	177.0	140.9	213.1
VALDEZ-CORDOVA CENSUS AREA	107	99.8	10,288	181.8	145.4	218.2
Interior						
DENALI BOROUGH	8	11.4	1,831	144.8	29.1	260.5
FAIRBANKS NORTH STAR BOROUGH	569	576.1	81,163	161.7	147.5	176.0
SOUTHEAST FAIRBANKS CENSUS AREA	55	56.0	6,215	180.0	130.0	229.9
YUKON-KOYUKUK CENSUS AREA	83	68.5	6,542	200.6	156.8	244.5
Northern						
NOME CENSUS AREA	93	81.4	8,872	178.2	140.9	215.5
NORTH SLOPE BOROUGH	62	49.6	6,744	206.6	151.7	261.6
NORTHWEST ARCTIC BOROUGH	64	52.2	6,518	186.2	138.5	233.9
Southeast						
HAINES BOROUGH	26	31.8	2,301	149.0	87.7	210.3
JUNEAU BOROUGH	267	288.7	28,572	152.9	133.8	172.0
KETCHIKAN GATEWAY BOROUGH	168	171.9	14,472	159.2	134.7	183.8
PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	39	59.2	6,716	120.9	79.5	162.2
SITKA BOROUGH	87	103.5	8,833	139.0	109.1	168.9
SKAGWAY-HOONAH-ANGOON CENSUS AREA	42	48.6	4,492	142.7	98.0	187.5
WRANGELL-PETERSBURG CENSUS AREA	85	95.0	7,200	149.8	117.5	182.0
Southwest						
ALEUTIANS EAST BOROUGH	17	16.4	2,276	130.3	60.6	199.9
ALEUTIANS WEST CENSUS AREA	21	30.0	7,368	126.9	58.5	195.3
BETHEL CENSUS AREA	118	125.6	14,835	156.8	128.0	185.6
BRISTOL BAY BOROUGH	10	6.9	1,363	186.4	62.1	310.6
DILLINGHAM CENSUS AREA	38	37.2	4,351	169.9	113.8	226.1
LAKE AND PENINSULA BOROUGH	20	13.0	1,787	217.0	120.1	313.9
WADE HAMPTON CENSUS AREA	68	50.8	6,497	220.3	167.0	273.6
TOTAL	5,097	5097.0	592,986	166.2	161.4	171.0

* Rates are per 100,000 population and are age-adjusted to the U.S. 1970 standard population: ICD-9 codes 140-208

† Expected number of deaths is calculated by multiplying the state age specific rates to the area's population. Thus it is the number of deaths that would have occurred if the rate in the area were the same as the state rate.

Cancer Death Rate
Alaska (1990-98)

Number of Deaths	**5097**
Age-Adjusted Rate**	**166.2**

CHAPTER 16: DIABETES

Diabetes is a chronic and potentially disabling condition characterized by elevated blood glucose levels. Diabetes is classified into two main types: Type 1 and Type 2. The most common type is Type 2, characterized by insulin resistance and accounting for approximately 90% of all diabetes. Type 1, characterized by a deficiency of insulin, accounts for 5-10% of all diabetes.

Approximately 14,000 Alaskan adults have been diagnosed with diabetes, comprising 3.3% of the adult population.[1] In 1998, diabetes was the 7th leading cause of death in Alaska.[2]

Individuals with diabetes are at increased risk of heart disease, blindness, kidney failure and amputations. Many of these complications can be prevented through early detection, improved delivery of health care and diabetes self-management.

In 1999, the Alaska Diabetes Control Program released the Alaska State Plan for the Prevention and Control of Diabetes. The plan was developed in collaboration with a statewide coalition of more than 60 health care professionals, advocates and people with diabetes. The implementation of the goals and objectives of the plan will require continued collaboration of many agencies and individuals in Alaska.

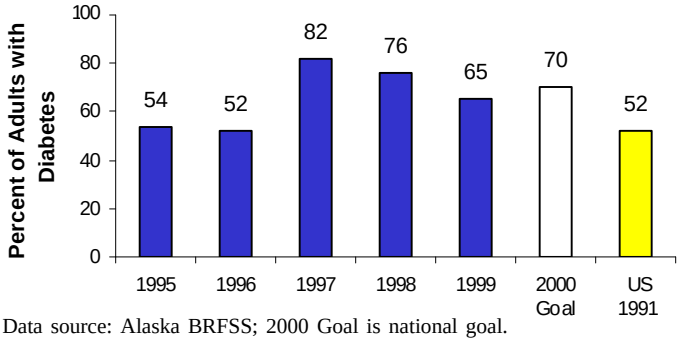
DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D40-D41.

Mortality

Death certificates are not an accurate way to track diabetes. Diabetes is underreported on death certificates; studies have shown that among people with diabetes who die, diabetes will not be listed on as many as 60% of the death certificates. Furthermore, it is often hard to determine if and how diabetes was related to the person's death. In addition, apparent changes can occur in diabetes mortality through simple reporting changes, such as adding an additional line to death certificates.[3]

People with diabetes who have had dilated eye exam in past year



Data source: Alaska BRFSS; 2000 Goal is national goal.

Despite the limitations, death certificates are used to track mortality rates in Alaska, using diabetes as any listed cause of death. This indicator has increased by approximately 15% during the 1990s.

Diabetes Prevalence

The prevalence of diabetes is measured among adults using the Behavioral Risk Factor Surveillance System. This survey samples only a small number of people with diabetes each year, so that year-to-year variation is largely attributable to the small sample. The prevalence is highest among adults over age 65, comprising 13.4% of that population.

Diabetes has been increasing in prevalence among the Alaska Native population over the past several decades.[4]

Overweight

Alaska has not met its goal of decreasing the percentage of adults who are overweight to <20%. In fact, the prevalence of overweight has been increasing. Because obesity is a risk factor for Type 2 diabetes, the increased prevalence of obesity in the population is expected to eventually lead to an increase in diabetes prevalence. Obesity is also a problem in management of Type 2 diabetes.

Preventive Health Care Among People with Diabetes

Yearly eye exams are recommended for all people with diabetes. The prevalence of Alaskans with diabetes who have had an annual eye exam appears to have increased from about 50% to approximately 70% during the 1990s. A recent report examining diabetes

preventive services at facilities serving predominantly American Indians/Alaska Natives found that facilities which scored highly in delivery of clinical preventive services were more likely to use a multidisciplinary team approach that included coordinated clinic appointments, maintenance of a diabetes registry, proactive preclinic preparation, flowsheet use and strong self-management support.[5]

Prevalence of Diabetes Complications

Alaska data on the prevalence of complication among people with diabetes is not available. The Centers for Disease Control and Prevention (CDC) estimates that among Alaskans with diabetes, there are annually 70 lower extremity amputations, 17 new cases of end-stage renal disease, 20-60 new cases of blindness, 3,980 hospitalizations, and 1,074 hospitalizations due to cardiovascular disease.[6]

RACE/ETHNICITY

The highest prevalences of diabetes are found among Hispanics and African-Americans (Table 16.1).

Table 16.1: Diabetes prevalence among Alaska adults by Race/Ethnicity, 1991-1999

Race/ Ethnicity	Adults who report a diagnosis of diabetes Percent	(95% CI)***
White	3.3	(2.7-3.8)
African-American	6.1	(2.0-10.3)
Alaska Native	3.5	(2.3-4.6)
Asian/Pacific Islander	1.6	(.5-2.7)
Hispanic**	3.7	(1.1-6.2)

*Alaska BRFSS 1991-1999
**Hispanic can be of any race
***95% Confidence interval

REGIONAL DATA

The highest mortality rates from diabetes are found in the Urban and Gulf Coast Regions (Table 16.2). The increased mortality in these regions may be due to people with chronic diseases moving to the more urban areas to be closer to medical care. On the other hand, it may be due to better documentation of diabetes on the death certificate.

Table 16.2: Diabetes Mortality by Region: 1990-98

Region of the State	Diabetes Mortality Rate*	(95% CI)**
Urban	14	(13-16)
Gulf Coast	14	(11-18)
Southeast	12	(9-14)
Rural	8	(5-11)

*Deaths per 100,000 population; diabetes as underlying cause of death ICD-9 code 250; age-adjusted to US 1940 population
**95% Confidence intervals

DATA ISSUES

Data on the general population of people with diabetes is difficult to ascertain in Alaska, with the exception of beneficiaries of the Indian Health Service. The Indian Health Service Diabetes Programs maintain a diabetes registry and actively monitor care and preventive practices. This is much more difficult to accomplish among the remaining 84% of the population.

Alaska does not have a uniform hospital discharge data reporting system at the present time, making surveillance of diabetes and its complications difficult.

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CHAPTER 17: HIV INFECTION

Acquired immune deficiency syndrome (AIDS) became reportable in Alaska in 1985. Human immunodeficiency Virus (HIV) infection became reportable in Alaska in February 1999. HIV infection reporting was introduced in Alaska because AIDS case data do not necessarily reflect current trends in HIV infection. There is a long incubation period between the time of first infection with HIV and the onset of symptoms that meet the AIDS case definition. In addition, the new antiretroviral therapies have delayed the onset of AIDS even more. Therefore, tracking all HIV infections (both HIV with AIDS and HIV without AIDS) will allow earlier identification of changing trends and more effective targeting of intervention strategies.[1]

From January 1, 1982 through December 31, 1999, a cumulative total of 717 cases of HIV infection were reported among individuals in Alaska. Of these, 512 were HIV with AIDS and 205 were HIV without AIDS. Of the 512 AIDS cases, 449 were Alaska residents at diagnosis. Of the 449 Alaska residents with AIDS, 233 have died. An additional 3 HIV cases without AIDS, and 4 cases who were not Alaska residents at the time of diagnosis have died, for a total of 240 deaths.[1]

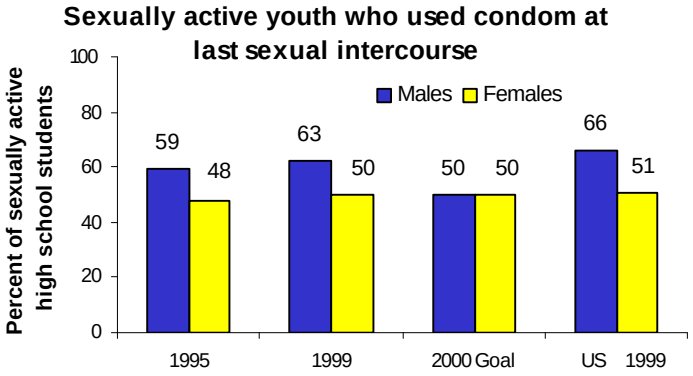
No treatment is available to cure AIDS, although antimicrobial treatments are now available to extend survival among those infected. Efforts to curb the epidemic are geared towards primary prevention strategies, particularly modifying personal behavioral risk factors.

DATA SUMMARY

For the data pertaining to this chapter, see Appendix D, pages D42-D44.

AIDS Incidence

In Alaska, as well as nationally, both the incidence of new AIDS cases and the rate of deaths from AIDS have been declining. This reduction has been attributed to the use of combination antiretroviral therapies, including protease inhibitors.[2]



Data source: YRBS, Section of Epidemiology

Nationally, the recent decreases in AIDS morbidity and mortality have not been accompanied by a concurrent decrease in new HIV infections. New HIV infections have remained level or increased.[3] It is too early to evaluate trends in the incidence of new HIV infections in Alaska, because HIV without AIDS did not become reportable until February 1999.

Of the 717 HIV cases reported in Alaska, 446 (62%) were among individuals whose exposure was male-male sex, injection drug use, or both. Among the 605 male cases, the greatest exposure risks were male-male sex (330 cases), injection drug use (54 cases) or both (35 cases). Among the 11 female cases, the greatest risks were heterosexual contact to an individual at high risk (36 cases) and injection drug use (27 cases).[1]

HIV Prevalence

At the end of 1999, the Section of Epidemiology estimates that there were 477 individuals with HIV (either with or without AIDS) in Alaska, based on the diagnosis of HIV or AIDS among 717 individuals, with 240 deaths. This is likely an incomplete estimate because of the underreporting of HIV infection diagnosed in years prior to 1999. The prevalence per 100,000 population was 77 which was lower than the Healthy Alaskans goal of 300 per 100,000 and than the US rate of 310-420 per 100,000. It will take several more years of data collection to more accurately measure the HIV prevalence in the general population.

Sexual Behavior Among Adolescents

The 1999 Youth Risk Behavior Survey found that 43% of Alaska high school students and 16% of middle school students reported having had sexual intercourse at least once. Rates increased with age and were similar for males and females in high school. The goal for 35% or less of 15 year olds to have engaged in sexual intercourse has been met, but the rate for older adolescents had not been met.

The only data source on condom use among adolescents is the Youth Risk Behavior Survey. In 1999, 63% of sexually active boys and 50% of sexually active girls reported using a condom at the most recent sexual intercourse. These rates have reached the Healthy Alaskans 2000 goal and are similar to the comparable US rates of 66% for boys and 51% for girls.

Injecting Drug Users

Alaska data are currently not available on the proportion of injecting drug users who are in drug treatment programs, or who do not share needles. National data show that 34% of injecting drug users are in treatment programs, and 60% do not share needles.

Blood Donor Monitoring

All individuals seeking to donate blood to the Blood Bank of Alaska are tested for HIV infection. The Blood Bank reports that 2 of 162,947 (.001%) units of blood donated between the onset of HIV screening in 1985 through December 31, 1997 have been HIV antibody positive. There were no positive units in 1997.

Counseling and Education

All individuals who have tested HIV positive in the counseling and testing programs have returned for follow-up.

Approximately 70% of Alaska high school and middle schools provide education in HIV/AIDS prevention. Data on activities in colleges and universities are not available in Alaska. Data are not available on the number of patients testing positive for HIV/AIDS in Alaska who receive appropriate provider referral (contact tracing). However, the Section of Epidemiology offers partner notification for all reported cases of HIV in Alaska.

RACE/ETHNICITY

AIDS affects individuals in all racial and ethnic groups in Alaska. African-Americans and persons of Hispanic ethnicity are somewhat over-represented among AIDS cases (African Americans = 9% of AIDS cases, 4.4% of population; Hispanics = 8% of AIDS cases, 4.7% of population) (Table 17.1).

Table 17.1: Distribution of AIDS Cases in Alaska by Race/Ethnicity

Race / Ethnicity	Number of Cases	Percent of Cases
White	282	63%
African-American	39	9%
Alaska Native	87	19%
Asian/Pacific Islander	6	1%
Hispanic	34	8%
Total number of cases=448; Data cumulative as of June 30, 1999 Data source: Epi Bulletin #15, 1999[4]		

REGIONAL DATA

Of the 448 Alaska AIDS cases, 296 individuals (66%) stated their residence at the time of diagnosis as Anchorage (Table 17.2). The state's three largest cities (Anchorage, Fairbanks and Juneau) account for 358 cases (80%). Although comparison of these data with the distribution of population in Alaska shows that Anchorage is over-represented among AIDS cases, no region has remained free of AIDS.

DATA ISSUES

Reporting of HIV infection was successfully implemented in Alaska with the support and cooperation of physicians, other health care providers, and laboratories. In addition to name, disease, and provider, the case reports include demographic information and risk/mode of exposure, if known. Case reports are confidential. The reporting of HIV has provided more accurate data on the incidence and prevalence of HIV infection in Alaska. In addition, the more timely reporting allows more effective case follow-up and partner notification activities.

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Table 17.2: AIDS Cases by Census Area of Residence at Diagnosis:
Data Cumulative as of June 30, 1999 N=448

Region	Census Area	Number of Cases
Anchorage/ Mat Su	ANCHORAGE BOROUGH	296
	MATANUSKA-SUSITNA BOROUGH	20
Interior	FAIRBANKS NORTH STAR BOROUGH	41
	SOUTHEAST FAIRBANKS CENSUS AREA	1
	DENALI BOROUGH	0
	YUKON-KOYUKUK CENSUS AREA	1
Gulf Coast	KENAI PENINSULA BOROUGH	24
	KODIAK ISLAND BOROUGH	7
	VALDEZ-CORDOVA CENSUS AREA	5
Northern	NOME CENSUS AREA	2
	NORTH SLOPE BOROUGH	2
	NORTHWEST ARCTIC BOROUGH	2
Southeast	HAINES BOROUGH	0
	JUNEAU BOROUGH	21
	KETCHIKAN GATEWAY BOROUGH	7
	PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	3
	SITKA BOROUGH	3
	WRANGELL-PETERSBURG CENSUS AREA	4
	SKAGWAY-YAKUTAT-ANGOON CENSUS AREA	1
Southwest	ALEUTIANS EAST BOROUGH	0
	ALEUTIANS WEST CENSUS AREA	0
	BETHEL CENSUS AREA	5
	BRISTOL BAY BOROUGH	0
	DILLINGHAM CENSUS AREA	1
	LAKE AND PENINSULA BOROUGH	0
	WADE HAMPTON CENSUS AREA	2

Data source: Epi Bulletin #15, 1999[4]

CHAPTER 18: SEXUALLY TRANSMITTED DISEASES

Sexually transmitted diseases (STD) are the most frequently reported infectious diseases and constitute a significant health problem in Alaska. In 1999, out of a total of 4,046 infectious disease reports submitted to the Section of Epidemiology, 2,203 (54%) were STDs.[1] Adolescents and young adults are at greatest risk of acquiring an STD.[2]

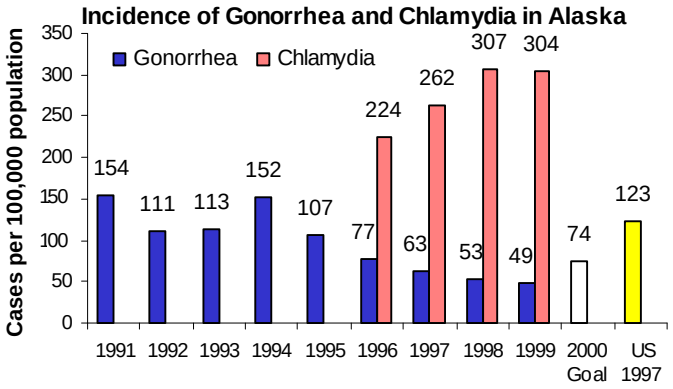
Partner notification activities target preventive public health services to individuals at highest risk of infection. Beginning in late 1999, public health providers increased partner notification activities, which resulted in identifying and treating individuals with previously undiagnosed STDs. Continued efforts are needed to identify and target high-risk populations in order to reduce new infections and complications.[2]

DATA SUMMARY

For all the data pertaining to this chapter, see Appendix D, pages D45-D47.

Gonorrhea

The Healthy Alaskans 2000 goal for gonorrhea infections has been reached, although it is unclear whether there has been a clearcut drop in infections or changes in screening and reporting. In 1994, a downward trend in gonorrhea cases was interrupted when the State Laboratory changed the gonorrhea testing technology to a genetic (DNA) probe. The test was particularly useful when specimen transport was required and offered the capability of testing for both gonorrhea and chlamydia from one specimen. The State made specimen collection kits and laboratory services available at no cost to providers and facilities. The number of gonorrhea infections reported in 1994 increased 35% over 1993. However, in January 1995, the state laboratories began charging fees and the amount of testing done at the labs declined substantially. Many of these tests may have been done at private labs but the number of reported gonorrhea cases declined.



Data source: Section of Epidemiology; 2000 goal and US data for gonorrhea.

Between 1990 and 1999, the rate of reported cases of gonorrhea decreased by 68%, from 154/100,000 population to 49 per 100,000 population. The Healthy Alaskans 2000 goal was reached.

Chlamydia

Chlamydia became reportable in Alaska in January 1996. Since then, chlamydia has replaced gonorrhea as the states' most frequently reported STD. Among the 50 states, Alaska ranked 8th in the rate of chlamydia infection in 1999.[2] Healthy Alaskans 2000 goals for chlamydia have not been determined.

Syphilis

The reported incidence of syphilis remains below the Healthy Alaskans 2000 goal. A total of 13 syphilis cases were reported in 1999. Thirteen cases were reported for each year in 1998 and 1999. No cases of congenital syphilis have been reported in Alaska since 1979.

Pelvic Inflammatory Disease

Pelvic inflammatory disease, a preventable complication of gonorrhea and chlamydia infections, is a major cause of infertility, ectopic pregnancy and chronic pelvic pain. In 1998, there were 13 reported cases of gonococcal pelvic inflammatory disease and 33 reported cases of pelvic inflammatory disease from chlamydia. In 1999, there were 9 reported cases attributed to gonococcal infection and 30 reported cases from chlamydia infection. There are no state or national goals for rates of pelvic inflammatory disease. The number of annual cases has remained relatively stable since chlamydia became reportable in 1996.

Repeat Infection

The Healthy Alaskans 2000 goal is that repeat infections (defined as a repeat infection with the same organism during the same calendar year) account for no more than 5% of the reported cases. For gonorrhea, repeat infections accounted for 4% of cases in 1998 and in 1999. For chlamydia, repeat infections accounted for 7% of cases in 1998 and 6% in 1999.

Sexual Behavior Among Adolescents

The 1999 Youth Risk Behavior Survey found that 43% of Alaska high school students and 16% of middle school students reported having had sexual intercourse at least once. Rates increased with age and were similar for males and females in high school. The goal for 35% or less of 15 year olds to have engaged in sexual intercourse has been met, but the rate for older adolescents had not been met.

The only data source on condom use among adolescents is the Youth Risk Behavior Survey. In 1999, 63% of sexually active boys and 50% of sexually active girls reported using a condom at the most recent sexual intercourse. These rates have reached the Healthy Alaskans 2000 goal and are similar to the comparable US rates of 66% for boys and 51% for girls.

Appropriate Management of STDs

The Section of Epidemiology in the Division of Public Health actively monitors the treatment of all reported cases of STDs. If an inappropriate treatment is noted, the treating health care provider is notified. Data are not available on the number of patients with STDs in Alaska who receive appropriate provider referral (contact tracing).

RACE/ETHNICITY

The highest rates of gonorrhea infection are found among African-Americans and Alaska Natives (Table 18.1).

Table 18.1: Gonorrhea Incidence among Alaskans by Race: 1999

Race	Cases*	Rate** (95% CI)***
White	74	16 (13-20)
African-American	50	181 (131-231)
Alaska Native	151	144 (121-167)
Asian/Pacific Islander	6	19 (4-35)

*Total number of cases = 302; includes 21of unknown race
**Rate per 100,000 population

REGIONAL DATA

The frequency of STD infection reports tend to be higher in the regions where there are the most people; however, the frequency of screening also has an impact on the number of reported cases (Table 18.2).

DATA ISSUES

In considering STD data, one should be aware of certain limitations. The quality of STD data are dependent upon the reporting provider and facility. Reported incidence of STDs may reflect the demographic characteristics of individuals utilizing a particular facility or the practices of certain providers and may not necessarily be representative of the characteristics of all infected individuals. Additionally, because of the nature of the specimen collection procedure, women are often screened as a routine part of a pelvic exam, while men are generally screened only if they have symptoms. For this reason more women than men are tested for STD.

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2. Section of Epidemiology: Gonorrhea, chlamydia and syphilis in Alaska 1999. Epi Bulletin Recommendations and Reports. 4(5); July 31, 2000.

Table 18.2: Gonorrhea Cases by Census Area 1999 (Total cases = 302)

Region	Census Area	Number of Cases
Anchorage/ Mat Su	ANCHORAGE BOROUGH	158
	MATANUSKA-SUSITNA BOROUGH	5
Interior	FAIRBANKS NORTH STAR BOROUGH	27
	SOUTHEAST FAIRBANKS CENSUS AREA	0
	DENALI BOROUGH	0
	YUKON-KOYUKUK CENSUS AREA	0
Gulf Coast	KENAI PENINSULA BOROUGH	4
	KODIAK ISLAND BOROUGH	5
	VALDEZ-CORDOVA CENSUS AREA	0
Northern	NOME CENSUS AREA	49
	NORTH SLOPE BOROUGH	4
	NORTHWEST ARCTIC BOROUGH	0
Southeast	HAINES BOROUGH	0
	JUNEAU BOROUGH	3
	KETCHIKAN GATEWAY BOROUGH	1
	PRINCE OF WALES-OUTER KETCHIKAN CENSUS AREA	0
	SITKA BOROUGH	2
	WRANGELL-PETERSBURG CENSUS AREA	1
	SKAGWAY-YAKUTAT-ANGOON CENSUS AREA	0
Southwest	ALEUTIANS EAST BOROUGH	0
	ALEUTIANS WEST CENSUS AREA	1
	BETHEL CENSUS AREA	38
	BRISTOL BAY BOROUGH	0
	DILLINGHAM CENSUS AREA	0
	LAKE AND PENINSULA BOROUGH	0
	WADE HAMPTON CENSUS AREA	4

CHAPTER 19: IMMUNIZATIONS AND INFECTIOUS DISEASES

The reduction in the incidence of and mortality from infectious diseases has been a significant public health achievement in Alaska during the past 50 years. Despite the progress that has been made, infectious diseases remain a significant cause of illness and death in Alaska. Tuberculosis remains deeply entrenched in Alaska, and will be with us for a long time, especially in the Alaska Native and Asian populations. Other common infectious diseases that threaten Alaska's populations include hepatitis C, salmonella, and giardia. The state must have the capacity to respond rapidly to potential outbreaks and to institute prevention measures. Furthermore, continued vigilance is needed to assure that all children are immunized in a timely manner.

DATA SUMMARY

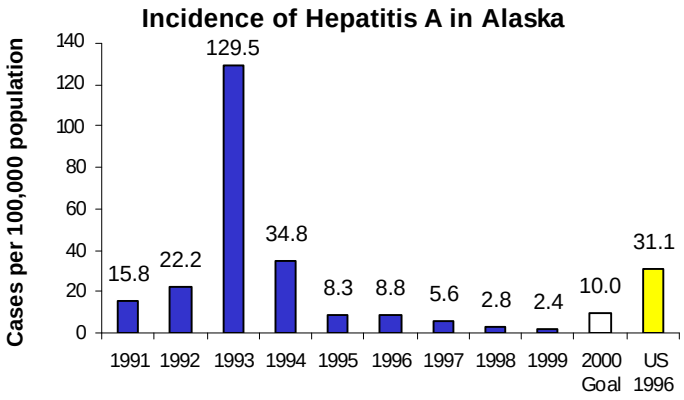
For all the data pertaining to this chapter, see Appendix D, pages D48-D50.

Vaccine-Preventable Diseases

Overall, significant progress has been made in controlling vaccine-preventable infections. There have been no cases of diphtheria, tetanus, polio or congenital rubella syndrome, and only one case of rubella, in the 1990s. Outbreaks of measles occurred in 1996 and 1998, largely occurring in school-aged children.[1,2] The implementation of a two-dose measles vaccination requirement for all school children in 1998 is expected to reduce the risk of measles transmission in Alaska.

Pertussis declined initially in the 1990s, but in 1997 and 1998 an increased number of cases was reported. The increased pertussis cases may be attributable to less than optimal immunization rates among young children in Alaska.

Alaska has periodically experienced large, widespread outbreaks of hepatitis A; however, with the recent introduction of hepatitis A vaccine, the frequency of this disease is expected to decrease. The rates of hepatitis B have also been declining during the 1990s and are expected to fall even further as children are now being routinely immunized against hepatitis B as well as against hepatitis A.[3]



Data source: Section of Epidemiology

Tuberculosis

The rate of incidence of new cases of active tuberculosis has remained fairly constant during the 1990s in Alaska. The Healthy Alaskans 2000 goal of less than 3.5 cases per 100,000 people has not been reached. The proportion of people with a positive skin test for tuberculosis who completed therapy increased slightly during the 1990s, but has not reached the goal of greater than 85%. Tuberculosis rates by race/ethnicity and by region are discussed later in this chapter.

Immunization

In 1996, the National Immunization Survey found that Alaska's immunization rates for children aged 19-35 months was only 69%, putting Alaska at 48th out of the 50 states.[4] This led to intensive efforts to improve immunization rates in Alaska through the *Year 2000 Childhood Immunization Initiative*. In 1998 the immunization rate had increased to 81%; however, the rate remains below the Healthy Alaskans 2000 objective of 90%. Efforts have been directed towards children in licensed day care facilities, where immunization rates have increased to 96%, close to the Year 2000 goal of 97% or greater. By the time children reach kindergarten or first grade, virtually all are immunized appropriately.

Influenza and pneumococcal immunization rates among Alaska adults aged 65 and older remain well below the Year 2000 goal of 80% or higher.

RACE/ETHNICITY

From 1995 through 1999 there was a total of 373 tuberculosis cases: 52 among whites, 240 among Alaska Natives, 10 among African-Americans, and 71 among Asian/Pacific Islanders. The rate of disease is highest among Alaska Natives and Asian/Pacific Islanders (Table 19.1).[5]

Table 19.1: Tuberculosis Incidence among Alaskans by Race: 1995-1999

Race/ Ethnicity*	Rate**	(95% CI)***
White	2.3	(1.7-2.9)
African-American	7.3	(2.8-11.8)
Alaska Native	47.3	(41.3-53.3)
Asian/ Pacific Islander	50.2	(38.5-61.9)

*Data on Hispanics not available
**Cases per 100,000 population: total number of cases = 373
***95% Confidence intervals

REGIONAL DATA

The highest rates of tuberculosis are found in the Northern and Southwest Regions (Table 19.2).[5] During the time period 1995-1999, cases in the Northern and Southwest regions accounted for almost half of all cases in Alaska.

Table 19.2: Tuberculosis Incidence by Region: 1995-1999

Region of the State	Rate*	(95% CI)**
Anchorage/Mat-Su	7.2	(5.9-8.5)
Gulf Coast	3.3	(1.4-5.2)
Interior	10.5	(7.6-13.4)
Northern	75.5	(59.6-91.4)
Southeast	6.0	(3.5-8.5)
Southwest	46.6	(36.9-56.3)

*Cases per 100,000 population: total number of cases = 373
**95% Confidence intervals

DATA ISSUES

Most infectious disease data are based on reports made by physicians, other health care providers and medical laboratories to the Division of Public Health. Because only a portion of ill persons seek treatment and because some persons diagnosed with a disease may not be reported, the case numbers published in this report represent variable proportions of the true burden of disease in the state. Therefore, the reported incidence is more indicative of disease trends rather than true or absolute incidence. Tuberculosis and AIDS are more actively monitored, and ascertainment of these conditions is considered to be closer to complete than it is for other infectious diseases.

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